OCTOBER, 1953

WOOD and wood products

THE NATIONAL MANAGEMENT AND PRODUCTION MAGAZINE
OF THE FOREST PRODUCTS INDUSTRY

Robert D. Pauley
See Wood Salutes

Features in This Issue

New Packaging Method Guards Furniture Finish

Resawing Before Drying Aids Box Production

10-Point Plan for Quality Control

Practical Hints on Sanding

Double Savings in Humidity Control

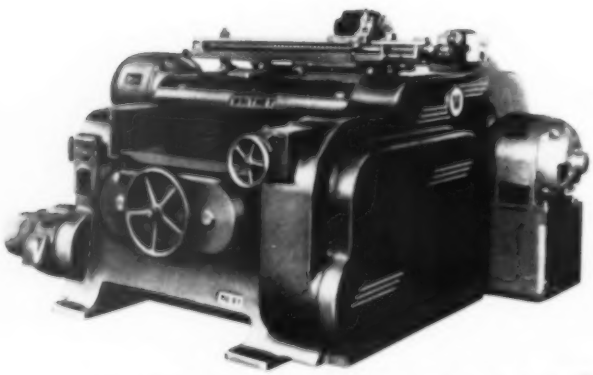
Other Items to See

* Handling Foremen
* Plywood Cores
* Readers' Letters
* Wood Puzzlers
* Current Prices
* New Products

A Vance Publication

Ask any operator — why the WHITNEY No. 97 Double Surfacer is the outstanding Double Surfacer in the field.

He will tell you it's because —



WHITNEY No. 97 DOUBLE SURFACER Variable Speed Drive. Micro-feed Selector. Motor raising and lowering of bed. Self-reversing, power feed grinder. Ball and roller bearing throughout. Easy adjustment, convenient, fingertip controls with safety feature. Feeds: 30 to 90 feet per minute. Planes Stock ⅛" to 7" thick. Widths 30", 36", 40" and 44".

- The Whitney 97 is built to meet today's production requirements.
- It's capable of volume production day in and day out, year in and year out.
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Add these features to Whitney's long experience in building quality planers and Whitney's careful and exacting workmanship in every detail of planer construction and you get low cost operation, low upkeep cost and the most profitable planer investment that you can make.

Investigate the Whitney 97 for all of your double surfacing requirements today. Write for No. 97 planer bulletin WP10.

In Our 116th Year

BAXTER D. WHITNEY & SON, Inc.

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ACROSS THE COUNTRY...

EKSTROM CARLSON

HI-SPEED MOULDERS

Users everywhere appreciate the *outstanding features* of this up-to-date moulder:

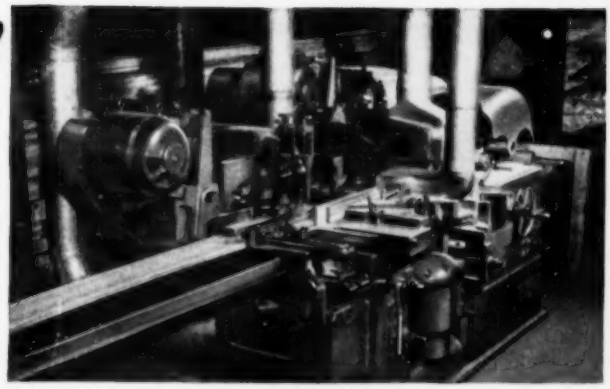
- Independently operated spindles with pre-selectable speeds.
- Speed selection *without* use of a frequency changer.
- Cutterheads are jointed at high spindle speeds.
- Infinitely variable feed rate from 25 to 225 feet per minute without stopping the machine.
- Increased production.
- Reduced knife cost.
- Reduced head cost.
- Lower operating costs.

All this is backed by alert, experienced EKSTROM CARLSON SERVICE that insures maximum efficiency.

ASK FOR NEAR-BY NAMES!

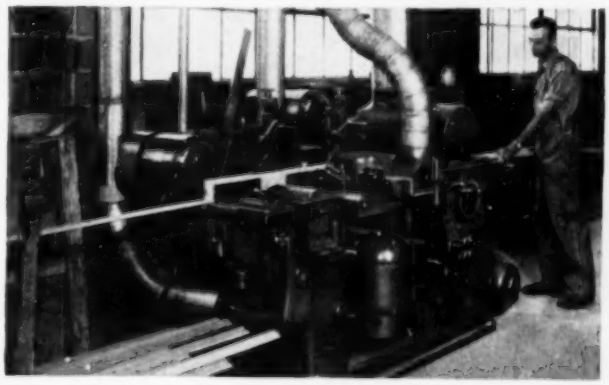
The three widely-scattered installations pictured here are typical of the scores of ECCo Hi-Speed Moulders now in use from coast to coast. If you want to inspect ECCo Hi-Speed Moulders in operation, let us send you a list of installations nearest you. Visit one or more of these places and SEE FOR YOURSELF the distinctive advantages of the ECCo Hi-Speed Moulder.

Write for ... this *new* 12-page booklet (Bulletin M200) that illustrates and describes all the details of ECCo Hi-Speed Moulders and gives full specifications of the models available.



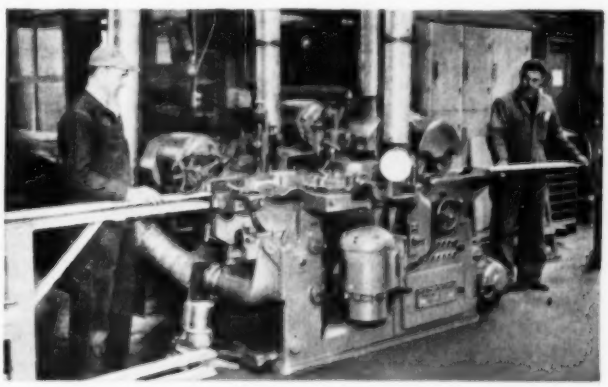
MARTINSVILLE, VA.

This is a 12" No. 468 ECCo Hi-Speed Moulder which is in constant use on a wide range of general millwork jobs.



SALT LAKE CITY, UTAH

Here an 8" No. 466 Hi-Speed Moulder is shown turning out one of numerous sticking jobs in a cabinet and fixture manufacturing company.



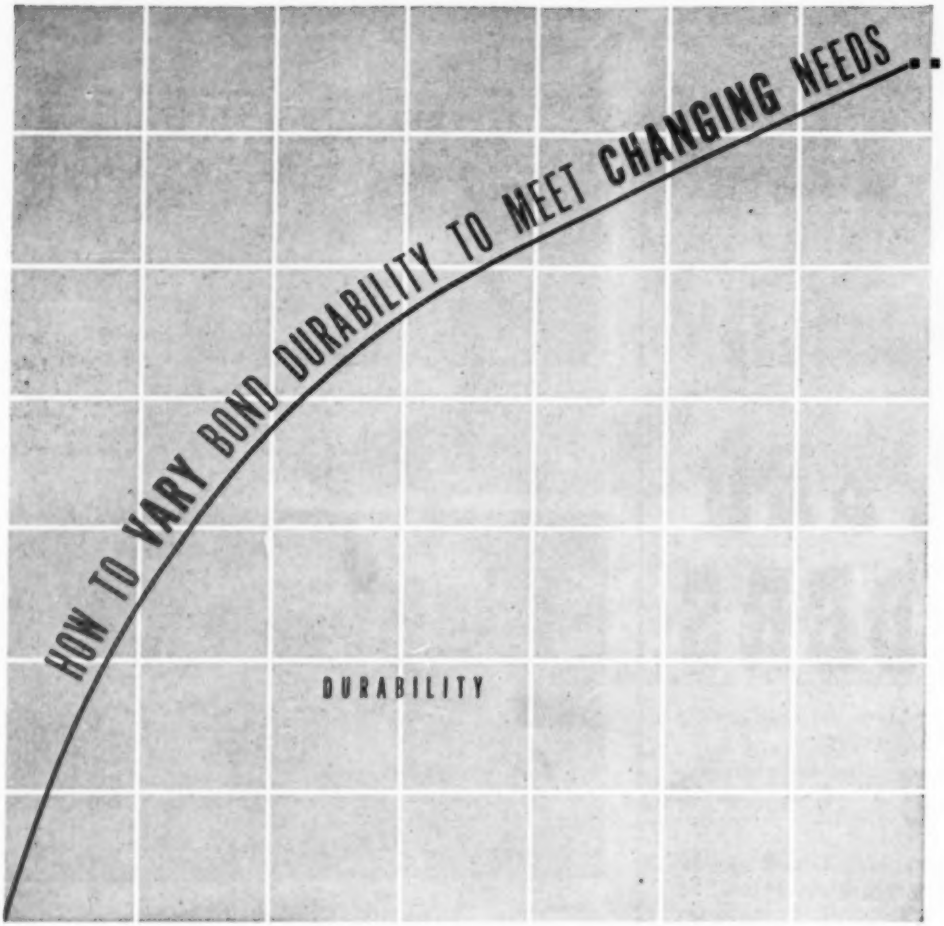
SAN FRANCISCO, CALIF.

This 6" No. 464 ECCo Hi-Speed Moulder is giving top performance on all kinds of general millwork in a west coast shop.

ECCO

MOULDERS · SANDERS · ROUTERS · SHAPERS · CARVERS · PANEL SIZERS · GROOVERS

EKSTROM, CARLSON & CO., 1409 Railroad Ave?, Rockford, Ill.



...with Monsanto Lauxite MF 300

The addition of as little as 10% of Lauxite MF 300 melamine resin improves the bond durability of urea glues. By varying the percentage of Lauxite MF 300, you can obtain any degree of durability your individual needs demand. This flexibility results in real dollar and cents economy – often saving plywood manufacturers *up to 50%* in glue costs.

Other advantages of Lauxite MF 300 include its colorless glue line and simplicity of use. Already, woodworkers are finding it extremely profitable to upgrade flush doors, export shipping containers, table and desk tops, and many other products with this more durable adhesive. So, why not call, or write or wire and let a technical representative of Monsanto, *the world's leading supplier of glues to the woodworking industry*, develop the best Lauxite MF 300 or Lauxite MF 300-urea combination for your needs.

Address: MONSANTO CHEMICAL COMPANY, Plastics Division, Room 5212, Springfield 2, Massachusetts. (Monsanto in Canada: Montreal.)

Lauxite: Reg. U. S. Pat. Off.

Adhesives for Western Industry

Monsanto's Western Division manufactures and supplies a complete line of plywood and woodworking adhesives for western industry from conveniently located plants at Seattle, Washington and Santa Clara, California.

Phenolic, melamine urea, resorcinol, soybean, and casein glues are included in this complete line for plywood production, edge gluing, and general assembly gluing.

For information on these adhesives, and on the entire line of Monsanto adhesives sold west of the Rocky Mountains, write to: MONSANTO CHEMICAL COMPANY, 911 Western Ave., Seattle 4, Washington.

MONSANTO

SERVING INDUSTRY... WHICH SERVES MANKIND

WOOD and wood products

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(advertisement)

Mauk Talk

Do you sometimes think that women who wear slacks would be more spic with less span?

• • •

Quotable quote from a hundred year old bachelor: "Marriage is for women only. Men should have nothing to do with it!"

• • •

Heard of a feller who was a terrific swimmer but he broke his neck last year in a dive on Skid Row.

• • •

You can be specific with us. Yes, tell us precisely your requirements and we'll furnish exactly what you need.

The extensive facilities and long experience of MAUK Lumber Co. permit us to do our job right—to fill your order correctly without compromise or substitution.

When you're being specific, specify the MAUK Lumber Co.

• • •

Simple Celia says her brother didn't realize his own value until he was sued for breach of promise.

• • •

Sign in a bar: "We do not serve women in this bar. You fellers will just have to bring your own."

• • •

Women start by resisting man's advances and end by blocking his retreat.

• • •

MAUK Seattle Lumber Co.
Seattle 5, Washington

C. A. MAUK Lumber Co.
Toledo, Ohio

Now Ready for

Furniture and Woodworking Plants

THE NEW IMPROVED

COLPRES 10-B

GLUE

The quick-setting urea resin glue for hardwoods, softwoods and plastic laminates.

QUICK SETTING . . Fast as ever . . . only 10 minutes, at room temperature, from clamping to machining.

ODORLESS . . . . . No special handling or ventilating equipment needed for mass production.

ECONOMICAL . . . Cuts fabricating costs and increases production with no extra clamping equipment.

DURABLE . . . . . Lasting joints and glue lines proved by laboratory tests and product use.

STAIN-FREE . . . . Glue staining of wood eliminated. Glue lines practically invisible.

The new COLPRES 10-B is now available in convenient 10- and 50-pound packages, as well as in larger quantities.

TRY THE NEW COLPRES 10-B GLUE *NOW!*

FREE SAMPLE

is yours for the asking. No cost, no obligation. Use the convenient coupon or your company letterhead.

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1319 Eighteenth Street, N.W., Washington 6, D.C.

Please send FREE SAMPLE of the New COLPRES 10-B Glue, with complete instructions on how and where to use it.

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City ..... Zone ..... State .....

OCTOBER, 1953

WOOD and wood products

VOL. 58, No. 10

INDUSTRY NEWS and TRENDS

LUMBER

Lumber Shipments Lower

Lumber shipments of 528 mills reporting to the National Lumber Trade Barometer were 0.6% below production for the week ending August 29, 1953. In the same week new orders of these mills were 13.0% below production. Unfilled orders of the reporting mills amounted to 35% of stocks. For the reporting softwood mills unfilled orders were equivalent to 21 days' production at the current rate, and gross stocks were equivalent to 56 days' production.

For the year-to-date shipments of reporting identical mills were 2.6% above production; new orders were 2.2% above production.

Leftovers Supply Pulp Mills

Slightly over 25% of sawmill and veneer mill leftovers in the form of chips, made up the total wood requirements for 1952 for the pulp industry in Washington, according to a survey published by the College of Forestry, University of Washington.

Some 458,000,000 board feet of chips were sent to the pulp mills. This about equaled the full timber harvest of 9,000 acres of old growth Douglas fir.

Other features of the survey: the pulp industry used 79,000,000 feet of re-log, pre-log and salvage timber in 1952, plus 143,000,000 feet of cordwood.

The industry as a whole used 1,812,000,000 board feet; principally hemlock (62%) and Douglas fir (21%).

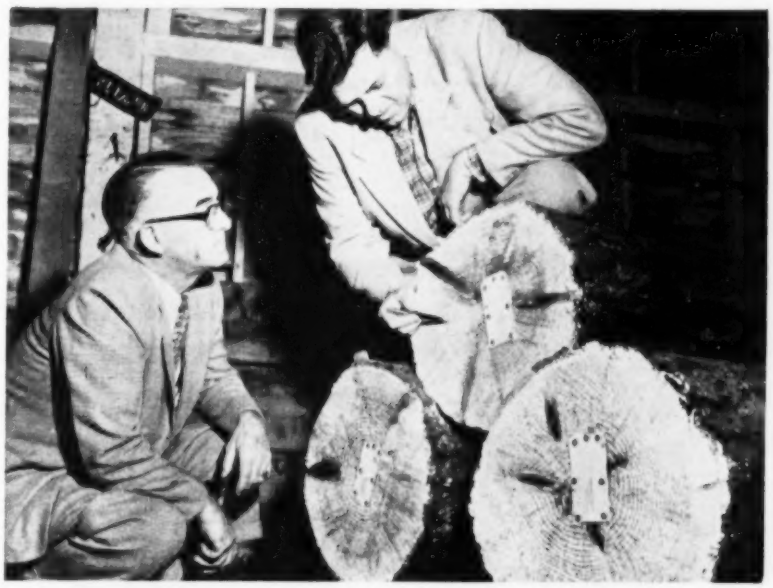
Majors May Use Laminated Bats

A baseball rule in force for many years may be discarded by organized baseball in 1954. The ruling, that baseball bats must be made from one piece of "hard, solid wood", has been amended by the Rules Committee in favor of bats made of layers of wood.

According to James Gallagher, chairman of the Rules Committee, the 1954 season will see laminated bats. However, spokesmen for the American League still voiced opposition.

Their chief complaint is that laminated bats may lead to tampering (weighing the end with lead, for example). They claim it would be harder to detect such tampering than with a solid wood bat.

Even if the bats are only grudgingly accepted in organized baseball, school and sand lot may use the bats in increasing numbers.



West Coast Lumbermen's Assn. Improves Grading Tests

T. K. May (right), technical director of West Coast Lumbermen's Association, explains to Howard L. Brown, superintendent of the West Coast Bureau of Lumber Grades and Inspection, amount of summer wood in new growth Douglas fir logs. The two lumber officials are shown inspecting part of a shipment of new growth Douglas fir logs being sent to the U. S. Forest Products Laboratory at Madison, Wis., where strength tests will be continued to determine the proper rating of structural lumber cut from this type of log.

WOOD PRESERVING

Preservatives Use Up

Wood-preservation statistics compiled by Henry B. Steer, U. S. Forest Service, show that the total volume of wood given preservative and fire-retardant treatment in 1952 was about 4% more than was reported in 1951, according to P. D. Brentlinger, president, American Wood-Preservers' Assn. and Forester with the Pennsylvania Railroad. Volume in 1952 totaled 314,998,356 cu. ft. compared with 302,471,317 cu. ft. in 1951.

Wood blocks showed an increase of 35%, fence posts, 30%; lumber, 13%; and crossties, 11%.

The South with about 45% of the plants treated over half of the total U. S. production. Louisiana and Texas led the states in number of plants with 17 each. Mississippi replaced Florida in second place with 12, while Florida and Georgia tied in third place with 10 plants each.

In 1952 the industry consumed a total of 267,193,538 gallons of liquid

preservatives and 12,425,146 pounds of solid preservatives.

In terms of material treated, creosote and creosote-coal tar solutions increased from 229,654,141 cu. ft. in 1951 to 238,743,311 cu. ft. in 1952; creosote-petroleum increased from 44,981,637 cu. ft. to 50,002,100 cu. ft.; and creosote-petroleum fortified with pentachlorophenol increased from 1,252,610 to 2,968,522 cu. ft.

WOOD CONTAINERS

Barrel Production Drops

In 1950, barrel plants produced 2,939,500 whisky barrels. In 1952, whisky barrel production had slumped to 1,186,641. The chief reason for the decline was the expanding operations of "moonshiners" who do not use barrels, according to George T. McCall, president, The Associated Cooperage Industries of America.

Last year, Federal, state and local authorities seized more than 20,000 moonshine stills with a reported producing capacity of 715,000 gallons of moonshine every day. Treasury department officials estimated the stills operated an average of 37 days before seizure. This production, McCall claims, if legally produced, would amount to about 529,000 barrels.

This means, according to McCall, a loss to the cooperage industry of ten million dollars. Broken down to components, the loss was 30 million staves, one million heads and a market for wood lot owners of 50 million log feet of white oak timber. Steel producers lost sales of some seven and a half million pounds of steel in the form of barrel hoops.

MAKE "CLEAN" MORTISES
ON FAST SCHEDULES
WITH GREENLEE TOOLS

To make *accurate* mortises easily, swiftly and economically, equip with *high quality* GREENLEE Hollow Chisels and Bits. Long-lived and fast-clearing, these GREENLEE tools add speed to your production, *precision* finish to your products. GREENLEE Hollow Chisels and Bits are made by the originators of hollow chisel mortisers. And GREENLEE produces a complete line of these tools for hard or soft wood and all makes of machines. Write for new illustrated folder M-159 describing these and other GREENLEE tools for mortising, boring, and routing. Greenlee Tool Co., 2160 Herbert Avenue, Rockford, Illinois.

TOOLS FOR CRAFTSMEN
GREENLEE

HOLLOW CHISELS • MACHINE BITS • DRILLS
ROUTING BITS • MULTI-SPUR BITS • PLUG
CUTTERS • COUNTERSINKS • MAKERS OF TECO
GROOVING TOOLS FOR TIMBER CONSTRUCTION

PACKAGING

New Packaging Institute Opens

A course in industrial packaging has been started at Purdue University. Called the Purdue Packaging Institute, the course lasts for four weeks. During this time students get both practical and theoretical instruction in packaging problems. Difficulties common to those in government, transportation and industry will be discussed.

Dates for the first three 4-week sessions are: September 28 to October 24, October 26 to November 21 and January 4 to January 30, 1954.

FORESTRY

Anti-Forest-Fire Drive Begun

A drive by the forest industries to consolidate the efforts of the thousands of wood-using industry employees in Tennessee in the fight against man-caused forest fires was launched recently in Memphis.

At kick-off ceremonies held at Memphis Plywood Corp. employees were told by John Holladay, president, Keep Tennessee Green Assn., "Your jobs and the future of the economically important forest industries in Tennessee depend on preventing forest fires."

Company employees were presented with Keep Tennessee Green car license plates and urged to "preach the gospel of forest fire prevention" by M. H. Speltz, company president.

Mr. Holladay told the group that the industry employs over 26,000 workers in Tennessee and provides more than $110 million in salaries and wages each year. He said that this situation could continue only if forest fires are controlled.

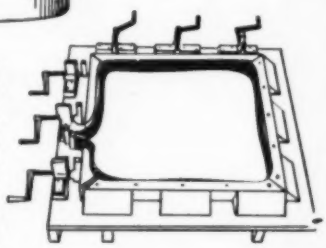
Alabama Forest Area Grows

Some 20.8 million acres of the state of Alabama's 32.7 million acres total land area are growing timber, an increase of 10% since 1935-6 when the first Alabama forest survey was made, reports the Southern Forest Experiment Station. Of the six survey areas, four increased and two decreased, with

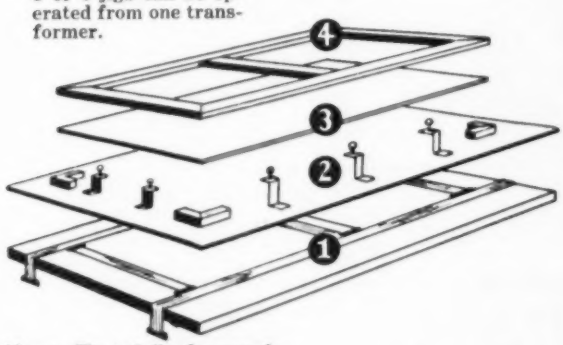
NEW, FLEXIBLE RESISTANCE HEATERS
for high-speed Edge-banding, Veneering, Assembly

WASHBURN HEATING UNITS

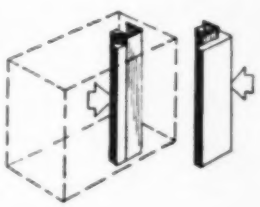
Heavy-duty, low-voltage power supply transformer with durable, flexible stainless steel heater strips. Operated manually or by timer or thermostat. Operating temperatures up to 300° or 350° F. as required. For use where long, narrow heating surfaces are required. For fastest cure, use with heat-sensitive urea resin glues providing durable, low cost, stainfree bonds. Special units for large or wide surfaces made to order. *At left:* BU-30S Unit. Heats up to 600 sq. in. of strips up to 3" wide. Complete with strip, ready to install in jig or clamp set-up: $23[illegible] f.o.b. Englewood, N.J.



At right: Typical set-up for edge-banding. Curing time for 1/16" thick plastic edge-band: 1 to 2 minutes. Strips take any curve. Also used for laminating skis, modern chair legs and arms, archery bows, etc. Up to 5 or 6 jigs can be operated from one transformer.

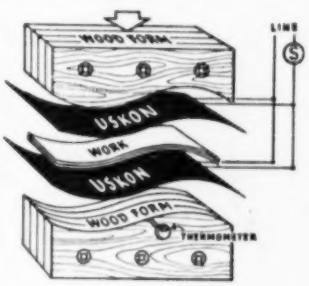


Above: Heated jig for panel-to-frame gluing for TV cabinets, etc. (1) Strips on plywood base. (2) Work surface of scrap plastic. (3) Masonite, thin plywood or plastic panel. (4) Wood frame with glue applied is clamped to heated panel. **At right:** Strips bent to angle shape for fast "hot pressing" of mitre or dovetail joints.

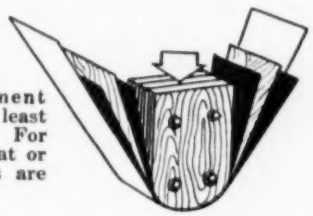


USKON HEATING UNITS*

Resistance-heated, flexible rubber "blankets"' Leads are plugged directly to line current—no transformer required. Used singly or in multiple layups. Operated manually or by timer or thermostat. Sizes: 1 x 2 ft. to 4 x 8 ft. or larger. Price: Approx. $4.15 per sq. ft., f.o.b. Englewood, N. J. Discounts for shipments of 5 or more of one size. Lowest cost heaters for large areas.



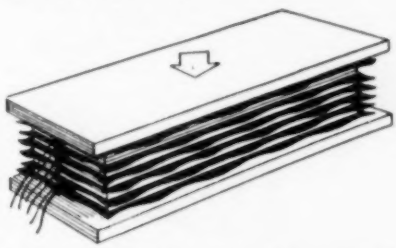
Right: USKON Units can be used with wood dies. Cut tooling costs for curved plywood, drawer fronts, instrument cases. Operating life: at least 2,000 hours at 200° F. For every use where wide (flat or curved) heating surfaces are required.



USKON Units can be inserted between layups to form a "bundle" of panels to be cured at one time. Converts cold press to a fast "hot press" for gluing plastic table tops, veneering furniture panels, facing flush doors (see drawing below). Curing time for gluing 1/16" thick plastic to plywood at 160-190°: 4 to 5 minutes. Eliminates clamping, storage, unclamping. Allows use of urea resin glues at *any* shop temperature.

* Reg. Trade Mark of United States Rubber Company. (USKON Units are sold and serviced in the woodworking industry by Washburn Electric Co.)

Useful in larger plants for fast production of special-order work without tying up hot-press facilities.



Send us a sketch of parts to be glued. We will recommend proper type of equipment, estimate cost, and supply complete literature and prices. (All prices quoted herein are subject to change without notice.)

Washburn ELECTRIC

WASHBURN ELECTRIC CO.

202 Sherwood Pl., Englewood, N. J.

the Southeast area showing the biggest increase: 18%.

Statewide acreage increases for softwoods were 874,600; for hardwoods: 1,014,800. About 70% of the forest area is now in softwood types.

Celebrate Tree Farm Beginning

The eighth anniversary of the founding of the Tree Farm Family of Nickey Brothers, Inc., Memphis, Tenn. lumber firm, was celebrated in August with a party for the 64 individual members.

These 64 members represent 20,000 acres of privately-owned timberland being managed for continuing production of timber crops.

The Nickey Company provides free management services for the tree farmers in return for the first chance to buy the timber when it is ready for harvest. The "birthday party" was also the occasion for the addition of 24 new members to the Nickey Tree Farmers group.

The Tree Farm program is sponsored nationally by American Forest Products Industries. In Tennessee the program is sponsored by Tennessee Timber Growers Assn., Southern Hardwood Producers, and Tennessee Conservation Dept.

for a fabulous finish...
JEWEL BRAND
Abrasive Belts
Finer finishing — sanding, smoothing, polishing — for all types of wood products.
ABRASIVE PRODUCTS, INC.
521 Pearl Street
South Braintree 85, Massachusetts

FURNITURE

Furniture Sales Steady

July furniture sales equaled July, 1952 figures, thus becoming the third month in a row to tie the same months last year, according to The Dean Co. news letter. Accounts receivable were up 8%, while inventories were up 4% over a year-ago stocks.

Sells "Old" Furniture Kits

Unfinished and unassembled furniture items designed from early American and English pieces, are being offered by a New England company.

Along with these items the firm sells wood refinishers' kits, complete with all materials and tools.

Other items sold: wax for scuffed floors and furniture, samples of American furniture wood and special glues. The company is The Furniture Doctor's Store, R. F. D. 1, Box 73, Clinton, Conn.

RESEARCH

FPRS Offers Technical Books

The Forest Products Research Society, Box 2010, University Station, Madison 5, Wis., has announced the publication of a "Wood Technology Series" of loose-leaf booklets covering 19 specific fields of interest within the industry. The volumes present technical information of practical interest to management, superintendents, and foremen as well as technical research men and educators.

Each volume contains organized reprints of pertinent articles previously published in the Society's *Proceedings* and regular issues of its *Journal*.

Nineteen separate booklets cover Chemical Utilization, Wood Structure and Engineering, Logging, Veneer-Plywood and Laminated Wood, Wood Seasoning, Construction and Housing, Pulpwood Handling and Pulping Processes, Quality Control of Wood, Wood Finishing, Containers and Packaging, Glues and Gluing, Wood Preservation, Electronic Heating, Woodworking Machinery, Wood Waste Utilization, Wood Research and Training Men, Lumber, Furniture Manufacture, and Fiber, Particle and Hardboard.

Prices of the individual loose-leaf volumes range from $2.25 to $6.25, depending on the amount of material contained.

Research Started On Prefabs

A new long-range research program in the field of home prefabrication was started recently by a committee

NEW All-Season All-Purpose SAW BIT

HERE'S HOW IT KEEPS SAWDUST OUT OF CUT

SIMONDS "Stand-All"

(PATENT APPLIED FOR)

Here is the biggest advance in saw bit design in many years — the first to prove successful for all year sawing, especially in frozen timber.

Designed to break up the sawdust and deflect it away from the swage of the shank or holder, this new type bit greatly reduces shank wear, helps expel the sawdust more effectively and, most important, prevents sawdust from slipping past the shank and spilling into the cut. So friction is reduced, saw runs freer and cooler, and saw tension remains more constant.

With "Stand-All" Bits, saws will take full feed without "snaking" or dodging knots. Leading due to tough bark in sapling pine is eliminated . . . and you get smoother, straighter cuts with less power in all kinds of timber.

Most popular kerf sizes in Styles B, F & D and No. 2½, 3, 3½ and 4½ are now available from your dealer . . . call him today.

SIMONDS SAW AND STEEL CO.

FITCHBURG, MASS.

Factory Branches in Boston, Chicago, San Francisco and Portland, Oregon
Canadian Factory in Montreal, Quebec. Simonds Division: Simonds Steel Mill, Lockport, N. Y
Simonds Abrasive Co., Phila., Pa., Meridian, Miss., and Arvida, Que., Canada

of the Prefabricated Home Manufacturers' Institute, 908 20th St., N. W., Washington 6.

The committee, headed by Richard B. Pollman, will study six phases of their industry's problems. Of interest to wood producers will be the committee's analytical study of pre-cut lumber, with pros and cons of cost, methods and geographical influences.

EDUCATION

Scholarships Offered at Yale

The Union Bag and Paper Corp. has granted Yale University $25,000 to provide 10 fellowships in the next five years for Southern students who wish to do graduate work at the Yale School of Forestry.

The grant was announced by George A. Garratt, Dean, Yale School of Forestry, and G. W. E. Nicholson, executive vice-president, The Union Bag and Paper Corp.

Under this new program, two fellowships, of $2,000 each, will be awarded annually for the next five years. One of the two fellowships will be awarded to foresters currently employed by the Union Bag and Paper Corp. The second is open to men who are graduates of any accredited forestry school and who are legal residents of Virginia, North Carolina, South Carolina, Kentucky, Tennessee, Georgia, Florida, Alabama, Mississippi. Louisiana, Arkansas, or Texas.

Applications for fellowships may be made to the Registrar, Yale School of Forestry, 205 Prospect Street, New Haven 11, Conn.

Schools To Celebrate Founding

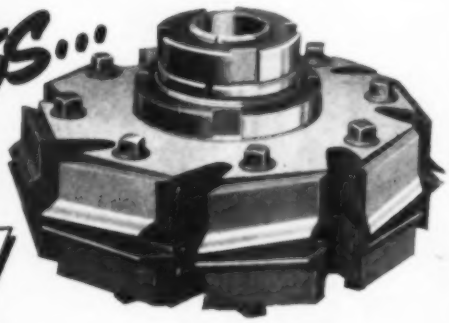
The Universities of Minnesota and Michigan will celebrate their fiftieth anniversary this month of the founding of their respective schools of forestry.

Alumni of the Michigan school will gather at Ann Arbor October 1-3. A picnic lunch, field trips, a tea for the ladies, a banquet and the Michigan-Tulane football game on Saturday October 3 will be featured.

A history of the activities of the University in the teaching of forestry and allied subjects has been prepared.

A two-day celebration, October 23-24 will commemorate the fiftieth anniversary of the Minnesota School of Forestry.

Balance Counts... ...and Diehl



CUTTERHEADS ARE BALANCED

With each knife on your cutterheads pulling hundreds of pounds in centrifugal force, it's easy to see why *balance counts*.

That's why Diehl Cutterheads have won top preference in the wood-working industry—for they *are balanced* . . . both statically and dynamically . . . on the finest dynetric balancer obtainable. And Diehl Cutterheads are built to *hold the edge and stand the wear* of high speed production.

To make sure of perfect balance and longer life, always specify Diehl Cutterheads. Contact your Diehl Representative or the factory. Ask for Condensed Cutterhead Catalog—Bulletin No. 452.

Every Diehl Cutterhead is balanced—both statically and dynamically—on this precision dynetric balancer.

Standard of Comparison in the Woodworking Industry

On the Banks of the Wabash

THE G. M. Diehl MACHINE WORKS, INC.

WABASH, INDIANA • U.S.A.

COMING EVENTS

Oct. 6: Upper Mississippi Valley Section Meeting, FPRS, Duluth, Minn.

October 6-8: Annual convention, National Hardwood Lumber Association, Chicago.

Oct. 9: Ohio Valley Section Meeting, FPRS, Cincinnati, O. (Host plant: Baldwin Piano Co.).

October 15-16: National Convention, Special Millwork Mfgs., Congress Hotel, Chicago.

Oct. 17: Hardwood Plywood Institute, Memphis, Tenn.

October 19-23: National Safety Congress and Exposition, Chicago.

October 29-31: Fourth American Forest Congress, Washington, D. C.

Oct. 30-31: Florida-Georgia-Alabama Section Meeting, FPRS, Radium Springs, Ga.

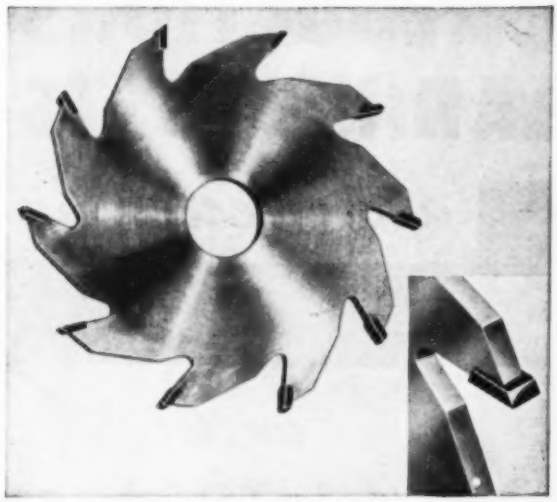
November 4-6: Seventeenth Annual Time and Motion Study and Management Clinic, Sheraton Hotel, Chicago.

Nov. 5-6: Northeast Section Meeting, FPRS, Yale U., New Haven, Conn.

Nov. 9-10: Deep South Section, FPRS, annual meeting, Angelina Hotel, Lufkin, Tex.

January 25-28, 1954: Plant Maintenance & Engineering Show and Conference, International Amphitheatre and Hotel Conrad Hilton, Chicago.

Carbide-tipped saw stays on job 4 months . . . steel saw only 8 hours



When one manufacturer used circular saws tipped with Carboloy cemented carbide blanks, the saws ran 4 months without resharpening. Steel saws on the same job lasted only 8 hours. Also, the carbide-tipped saws cut so smoothly that 80 percent of the wood could be joined without planing.

Get results like this yourself! Use woodcutting tools tipped with Carboloy cemented carbide

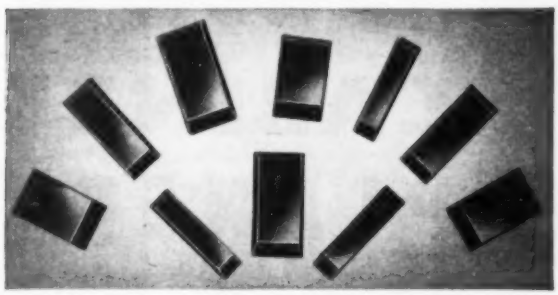
In one plant on general saw work, the teeth of steel-toothed saws were quickly dulled by minerals in the wood. They needed sharpening twice a day, at a maintenance cost of about $1.00 per sharpening.

Then, saws tipped with Carboloy cemented carbide were used. The carbide-tipped saws ran four months without grinding. Production increased as downtime and maintenance costs decreased.

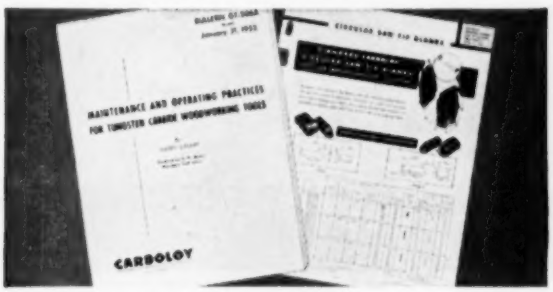
This case illustrates how Carboloy cemented carbide can help the woodworking industry. You can get similar results.

Although the Carboloy organization does not make woodworking tools, they supply cemented carbide in a wide range of sizes and shapes. *Get saws tipped with Carboloy cemented carbide from your saw manufacturer.*

Send coupon for free technical literature and for details on Carboloy Customer Training School.



Carboloy saw tip blanks are standardized to meet industry's requirements. Stock blanks are available in tough, hard-to-chip Grade 883 and also available nonstock in Grade 44A. Blanks in all sizes and shapes, for any type woodworking tool, can be made to your specifications in a hurry.



Send coupon today for free woodworking Bulletin GT-206A containing maintenance and operating practices for tungsten carbide woodworking tools. Also available, is Carboloy cemented carbide Saw Tip Catalog Sheet WW53-1, containing specifications and prices for circular saw tip blanks.

Tuition-free training school. Practical one-week course in Detroit includes lectures, films, actual shop practice in all pertinent phases of carbide use and maintenance.

CARBOLOY
DEPARTMENT OF GENERAL ELECTRIC COMPANY
1195 E. 8 Mile Ave., Detroit 32, Michigan

Rush me at no cost or obligation Bulletin GT-206A, *Maintenance and Operating Practices for Tungsten Carbide Tools*, and Saw Tip Catalog Sheet WW53-1, containing prices and specifications on carbide saw tips. Also, send me information on your tuition-free training school.

Name_____ Position_____

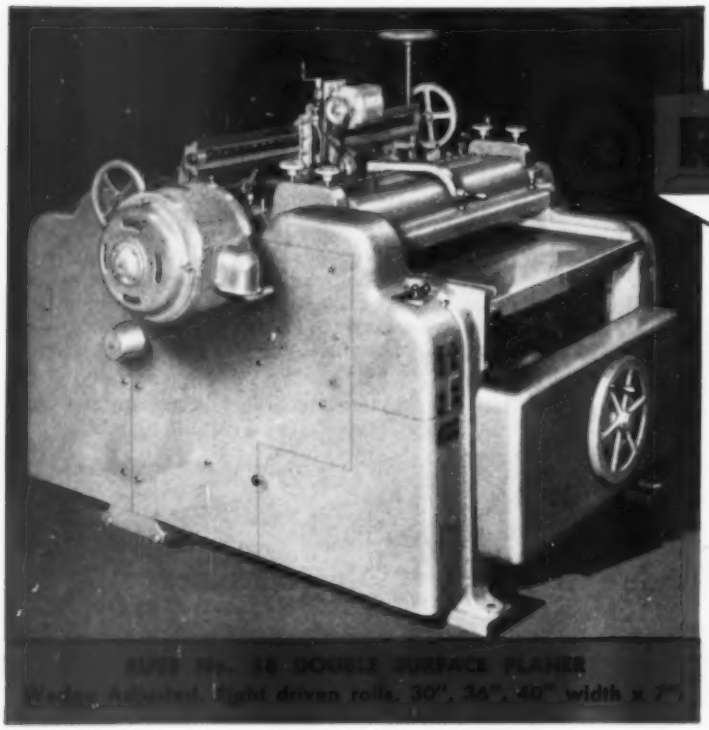
Company_____

Address_____

City_____ Zone____ State_____

"Carboloy" is the trademark for the products of the Carboloy Department of General Electric Company

Radical REDUCTIONS *in* PLANING COSTS *are effected by*



REPLACING

with

BUSS CABINET PLANERS

By replacing your old machines with Buss Cabinet Planers, you can achieve finest finished planing three to four times faster and reduce costly follow-up operations. Faster, more accurate knife-grinding-and-jointing features and semi-automatic micrometer adjustment controls are additional time-and-money-saving features. And such features as chromium plated beds and bars, one-shot lubrication and many other exclusives assure years of sustained accuracy with a minimum of maintenance.

The Buss line contains single and double cabinet surface planers to suit every production set-up; also a modern-to-the-minute double surface planer for the surfacing of rough lumber. We will be glad to help you select the Buss Planer that suits your production requirements.

PRECISION BUSS PLANERS

Write for descriptive details

PLANER SPECIALISTS EXCLUSIVELY

244 EIGHTH STREET, HOLLAND, MICHIGAN

BUSS
SINCE 1862
MACHINE WORKS

NOW!

WOOD-LOK®

3026*

a basically improved and approved resin glue

more PLUS Features

- **SHORTENS ASSEMBLY TIME.** Assemblies can be passed through all subsequent operations after a clamping period of only 15 to 20 minutes. Reduces costly delays in assembly lines and spray booths.
- **LOWER CLAMPING PRESSURES** produce high strength with as little as 10 psi—as proven by impartial tests. Reduces jig and case clamp costs; also clamping and releasing time.
- **HIGH HEAT RESISTANCE.** Unlike ordinary polyvinyl acetates, WOOD-LOK's patented copolymer has been designed to resist the higher temperatures encountered in modern forced baking of wood finishes.
- **STRONGER BOND** coupled with high initial strength permits prompt handling of assemblies. Saves hours. No need to wait for glue to cure.
- **ALWAYS READY FOR USE.** No costly labor for preparation. No wastage due to hardening in glue pots.
- **FASTEST SETTING WOOD-LOK 3026** is unaffected by changes in temperature. Eliminates hot glue pots. Produces uniform setting regardless of shop temperatures.
- **GREATER VERSATILITY.** WOOD-LOK, which is unexcelled for the manufacture of case goods, is also unexcelled for laminating plastic/plywood dinette tops, gluing flush doors, and gluing composition and synthetic woods.
- **FULLY TESTED.** In production, as well as independent laboratories. Full details and copies of test results are available upon request. National's technical service is always available to you.

Freeze-Thaw Proof

WOOD-LOK 3026 is not affected by repeated freezing and thawing in shipment or storage.

This special, fast setting vinyl copolymer can be shipped anywhere—anytime.

Now you need never switch to slower, less efficient and less durable glues in the winter months.

WOOD-LOK 3026 insures year 'round, uniform, fast production.

RESYNS®
National
ADHESIVES

Address: 270 Madison Avenue, New York 16; 3641 So. Washtenaw Avenue, Chicago 32; 735 Battery Street, San Francisco 11; and other principal cities.

YES! **I'd like to test National's new improved and approved WOOD-LOK 3026. Please send:**

☐ 5 gallon container. Bill me at the quantity drum price.
☐ Have a National representative call.

Name_____ Title_____

Company_____

Address_____

City_____ Zone____ State_____

*If you already use WOOD-LOK you will continue to receive your present WOOD-LOK until we are instructed to change to WOOD-LOK 3026.

LETTERS to the EDITOR

Dimension Stabilizing Process

Editor, WOOD & WOOD PRODUCTS:

On Page 36 of the August issue of your magazine, the writer noticed an article entitled "Wood's Dimensional Stability Promoted by New Process" as written by James J. Upson. Would you be good enough to advise where we might contact Mr. Upson or the person in charge of this process, as we are interested in securing information on the same.

—U. C. C., N. J.

Casting Resins a Hot Subject

Editor, WOOD & WOOD PRODUCTS:

Will you please send us more information about casting resins. We would like very much to know who manufactures the resin, etc.

—M. Co., N. Y.

Editor, WOOD & WOOD PRODUCTS:

Having read with considerable interest Thomas A. Dickinson's article in the August issue, and operating a fancy box department, the writer would appreciate your advice as to any manufacturer in the northeastern area who can give us more technical information on resinous coating and manufacturing methods.

—Box Mfr., Vt.

Editor, WOOD & WOOD PRODUCTS:

We certainly would appreciate any further information you have available on casting resins. We especially desire the sources of supply for these resins and perhaps a list of reference reading. We are working with northeastern hardwoods and any information relative to these species would be of great help. Is there anyone working with this type of material here in New England?

—Lumber Mfr., N. H.

Editor, WOOD & WOOD PRODUCTS:

Will you please furnish us with any information you have relative to converting our waste; namely, sawdust and shavings, into fuel blocks.

—O. D. Co., Pa.

Editor, WOOD & WOOD PRODUCTS:

We have read with considerable interest your articles on utilizing wood waste with casting resins. We would appreciate information as to where we might locate a manufacturer or supplier of the type of resins mentioned, using low temperatures and little or no pressure. Thank you.

—Wood Products Mfr., Mich.

Editor, WOOD & WOOD PRODUCTS:

The article about casting resins in your August, 1953, issue is very interesting and the writer would like to know the answers to the questions: Who makes the casting resins, and who makes the grinding and pulverizing machines?

—Furniture Mfr., Tenn.

Editor, WOOD & WOOD PRODUCTS:

I am interested in the article in the August issue of Wood & Wood Products on casting resins for wood waste, which I think is most important.

Can you tell me the proportion of resin which would be necessary to bond sawdust in this manner, weight for weight?

—"Timber Merchants", England.

Hydraulic Barking

Editor, WOOD & WOOD PRODUCTS:

Quite recently the writer was told that some lumber companies removed the bark from the logs by directing fine streams of water at high pressures against the log. Would you be good enough to advise if this is done and, if so, where I might procure information on the necessary hydraulic equipment, spray tips, etc.?

—E. R. B., N. J.

"Wood Award"

Editor, WOOD & WOOD PRODUCTS:

Thank you for sending me a copy of your news release and photo covering the "Wood Awards" ceremony in Memphis. We are proud of Mr. Rice's achievement and the recognition given him by your magazine.

I will follow your contest in the future with much interest and appreciate the recognition we have received in this year's contest.

—W. B. DeVall,
Alabama Polytechnic Institute

Bent Maple or Birch

Editor, WOOD & WOOD PRODUCTS:

Under Wood Puzzler No. 98 in your April edition you ask for sources on bent hard maple or birch. I too am looking for such sources and when you have a list I would appreciate your sending one to me.

—F. W. H., Furniture Mfr., Mass.

SPEED
IS ONLY ONE OF ITS ADVANTAGES!
SIX BIT MODEL (4 bit model also available)
THE SHIMER HIGH SPEED
VISE GRIP HEAD
for high speed, true-to-pattern
MATCHING, JOINTING & SHIPLAP PRODUCTION
Shimer Vise Grip Heads are made from premium steel forgings of open hearth quality, long known for their strength and service; designed for consistent uniformity; uniformly balanced for vibration-free operation.
Like all Shimer heads, VISE GRIP HEADS are made by pioneers in dependable woodworking tools with a simplicity that means fewer parts to maintain. Their custom-built precision gives the full economy of a long-lasting, free-cutting tool!
Shimer milled-to-pattern bits cut evenly, wear evenly without pattern distortion . . . are easy, quick to sharpen. Vise-grip seating of bits on a well balanced head spells safety to the operator and uninterrupted production speed to the mill.
write or phone for prompt service . . . free catalog
SAMUEL J. SHIMER & SONS, INC.
RACE STREET • MILTON, PENNA.
ECONOMY
LONG-RUN DEPENDABILITY
PATTERN ACCURACY
QUALITY WORK
OPERATOR SAFETY
PRODUCTION SPEED

and it's sold here

This "peeler" log was once part of a giant Douglas fir that grew in Oregon's rich rain forests.

It is shown here in an Associated mill at the beginning of its transition from raw log to finished product. At the end of the manufacturing line it is excellent plywood, grademarked and trademarked in a double guarantee of quality.

For more than 30 years APMI has been making plywood from fine timber, in modern mills equipped with the best of machinery and with hundreds of skilled workmen.

This plywood is shipped to major building and distribution areas and is sold by veteran plywood men. We welcome your inquiries.

BRANCH SALES WAREHOUSES:

4268 Utah St., St. Louis, Mo.
4814 Bengal St., Dallas, Texas
4003 Coyle St., Houston, Texas
1026 Jay St., Charlotte, N. C.
Worley Road, Greenville, S. C.
925 Toland St., San Francisco, Cal.
Eugene, Oregon
Willamina, Oregon

SALES OFFICES:

31 State Street, Boston, Mass.
595 E. Colorado St., Pasadena, Cal.

APMI

ASSOCIATED PLYWOOD MILLS, Inc.

GENERAL OFFICES: EUGENE, OREGON

Plywood plants at Eugene and Willamina, Oregon
Lumber mill at Roseburg, Oregon

YES, BELCOBALSA CORE STOCK COSTS LESS TO BUY—LESS TO PROCESS—LESS TO HANDLE!

BELCOBALSA CORE STOCK COMES CUT-TO-SIZE, READY TO GLUE

Because it is delivered ready for gluing or dry assembly, Belcobalsa Certified Kilndried Core Stock saves time, labor and lumber. Belcobalsa comes dressed, trimmed and ripped exactly to specifications, and bundled according to size. Thus, Belcobalsa eliminates costly processing, handling and sorting. And the manufacturer avoids lumber waste that might otherwise run as high as 35% of total core stock purchased. *Yet Belcobalsa is priced no higher than core stock delivered in random lengths and widths. In other words, Belcobalsa reaches the assembly line at lower cost.*

REDUCES COST OF SHIPPING YOUR FINISHED PRODUCTS

Belcobalsa is the lightest in weight of commercial woods. Two men can easily unload a carload of Belcobalsa Core Stock. Users of Belcobalsa enjoy resultant savings not only in initial handling, but in handling and shipping of finished products. One manufacturer, for example, has reported saving $600 in freight charges per carload of finished goods!

COMPARE THE YIELD OF BELCOBALSA WITH YOUR PRESENT CORE STOCK

Here is a sample yield comparison of Belcobalsa with the typical core stock now in common use for the manufacture of flush doors. Whatever your product may be, our engineers will be happy to help you make a similar comparison with any other core stock you use, or are considering!

	Standard Softwood or Hardwood Core Stock	BELCOBALSA
Grade delivered	No. 2 B Common or equivalent	Select, free of major defects
Dryness	Green	Certified KILN DRIED
Finish	Rough	Fine saw finish or S1S
Thickness purchased	8/4"	7/4"
Lengths	Random	Cut-to-length
Widths	Random	Cut-to-fixed widths
WORK EFFECTED AT DOOR PLANT		
Kiln drying with corresponding shrinkage	yes	NO
Cutting off defects	yes	NO
Ripping into core strips	yes	NO
Trimming to length	yes	NO
Estimated yield of core stock	65%	100%
Equivalent footage on 4/4" basis including labor cost figured in boardfeet	1,800 boardfeet	1,000 boardfeet
Lumber needed per 1,000 square feet of core		
Hardwood or Softwood, 8/4" requir.	3,600 boardfeet	
BELCOBALSA 7/4" requir.		1,750 boardfeet
Assuming that a solid core door 1¾" x 3-0 x 6-8 has 16 sq. ft. of core:		
1,000 boardfeet of hardwood or softwood will make	17 Doors	
1,000 boardfeet of BELCOBALSA will make		36 Doors

CERTIFIED KILNDRIED

Every boardfoot of Belcobalsa is dried in our own kilns. Our Ecuador plant now has 12 Moore Dry Kilns with a capacity of 2,000,000 boardfeet. This means another major saving in your processing cost — and it means there is no shrinkage loss after Belcobalsa is delivered to you.

Remember: Belcobalsa Certified Kilndried Core Stock reduces the weight of your panels because of its low, uniform density; makes them warp-resistant because of its inherent stability.

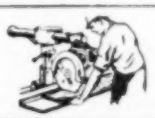
BELCOBALSA CORE STOCK ELIMINATES THESE FIVE OPERATIONS:

HANDLING & SORTING

KILN DRYING

RESAWING

RIPPING



TRIMMING

CERTIFIED KILNDRIED
BELCOBALSA
REGISTERED TRADE MARK

Write For Complete Information, Samples, Prices.

BALSA ECUADOR LUMBER CORPORATION

500 Fifth Avenue, New York 36, N. Y. Pennsylvania 6-0697

What Basis for the Jitters?

We've seen and heard much in recent weeks about "businessmen with the jitters." Wonder if it isn't time to take a good, square look around and see what the score really is. Good news, you know, never seems to get as much attention as the other kind.

Reminds us of the business that made a million in 1952, its biggest year. In 1953 it will make 1¼ million, another new record. But it expects to make only $900,000 in 1954, so it's singing the blues. Less than the record figures, but still the company's third most profitable year. Is that bad?

Take home building. In 1950 the record total of nearly 1,400,000 new nonfarm dwelling units were started. Each of the following two years saw more than a million starts, and 1953 is also calculated to hit a million units. But next year volume may taper off 10 or 15%. Cause for the jitters? No, the professional home building industry and its basic suppliers will still be busy and making money on 800,000 to 900,000 units.

Look at the automobile industry. Who expected the huge, pentup postwar demand for cars to continue this long? If auto sales do come harder in the next few years, you can depend on that industry to solve the problem with "more car for the money", more advertising, harder selling and all the other merchandising ideas for which the auto makers were famous back in the days when they had to ring doorbells. And they'll make money.

Another example is the steel industry. What if it does operate at only 85% of capacity next year? Don't forget, that capacity was expanded mainly for war production, and 85% is still a mighty profitable level.

What about the farmer? Is he really going to the poorhouse? No, he may make a little less than in the past 10 years, but he'll still make money and have plenty of purchasing power. So if farm equipment dealers face a 10 or 15% decline in sales next year, will that put them out of business? Not those who belong in business and remember how to sell! They'll still make money.

So it goes across the board, and countless other examples could be cited. This country is too big, too dynamic, too important, and it's still growing. Today, 160 million population —that's 30 million more than we had to take care of in 1940. Tomorrow—by 1975 —200 million people. Just taking care of that vast increase—supplying them with the food, the clothing, the homes, the furniture, the cars and TV sets, and all the other things they'll need—will keep our economy going at high speed through the years. Maybe not at peak postwar speed, but surely at a highly profitable pace. And that's not taking into consideration the production we'll have, the volume we'll sell and the money we'll make from the new infant industries—electronics, nuclear energy and others—that are destined to become giants in the near future.

If you're seeking sound reasons for not having the jitters, you can find plenty. But crying always seems easier than facing up to a challenge and working your way past it. As for us, we see nothing in the present or the near future which can unsettle our faith in the destiny of America to continue moving forward to ever more prosperous and prolific times. And the few occasional pauses that may occur along the way will serve only to sharpen the enterprising spirit and productive genius with which our people meet every such challenge. All we'll need is a reapplication of the kind of selling drive that made us great in the days before sellers' markets. Remember?

(Comments, and inquiries regarding distribution of reprints of this message to employees and others, are invited.)

Resawing Before Drying...

HARDWOOD BOLT STOCK is moved (left) by lift truck into plant, where (center) defects are ripped out; then stock is resawed (right) into ¼ in. boards and palletized for transfer to kiln

New 70,000 ft. Capacity Kiln...

NEW KILN has 70,000 bd. ft. capacity, permits stacking palletized lumber five tiers high. Lift truck has side-shift attachment for accurate pallet placement. **RIGHT**—Checking moisture content of kiln-dried staves

Solve Moisture Control Problem

Box Firm's Changes Result in Tighter Control, Better Production, Time and Labor Savings, End of Complaints

UNIFORM CONTROL OF MOISTURE CONTENT, substantial savings in time and labor, better production, and the end of customer complaints and rejects on account of cracking and splitting are oustanding results of an unusual new dry kiln installation at the General Box Co.'s plant in Louisville, Ky.

Coupled with a strict quality control program, the new kiln has made possible a changeover from the conventional drying of 4/4 lumber to the resawing of green lumber into ¼ in. boards *before* drying.

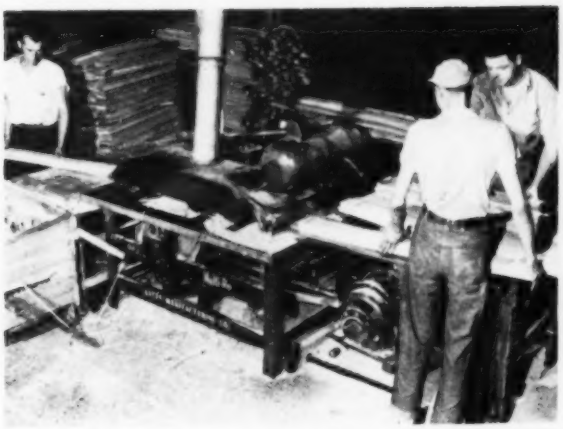
Where the moisture content of the hardwood used in this operation had formerly ranged erratically from below 7% to well over 15%, the new equipment and procedure results in control of moisture content within a range from 9.5% to 12.8%, as the accompanying "before and after" graphs show. (See Page 22.)

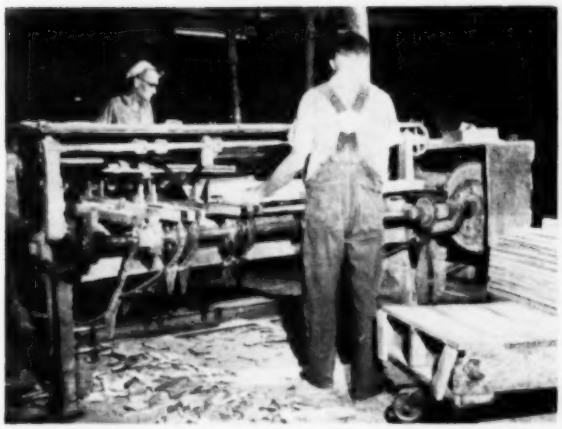
Another advantage gained by the changeover is better control of thickness which is now maintained to a tolerance of plus .1/64 in. to minus 0 in. Drying time has been cut in half. Saws are kept on the job longer and their maintenance costs have been reduced. Labor has been saved, and finally, where poor curing had caused customer complaints on account of cracking and splitting and the rejection of two carloads of the finished product, such complaints and rejects have now ceased.

The new kiln has a capacity of 70,000 bd. ft. and is actually the equivalent of two average-size kilns. Its unusual dimensions are approximately 32 ft. long, 22 ft. high and 20 ft. deep, and it permits stacking palletized lumber five tiers high. The accompanying photos show the production sequence and here, in the words of R. G. Hayden, manager of the Wood Box Division at Louisville, is the complete story:

"In 1952 we were confronted with the problem of producing fairly tight

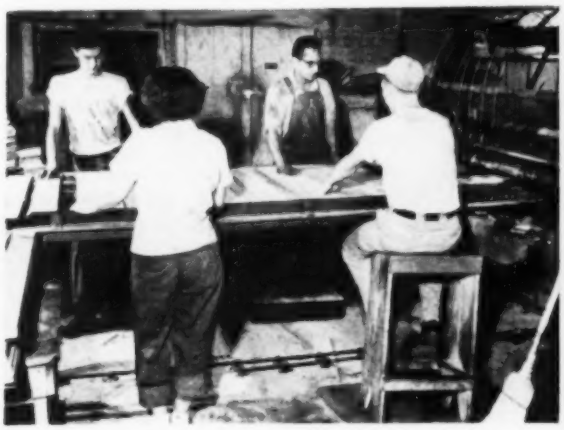
Finishing stock after drying . . .

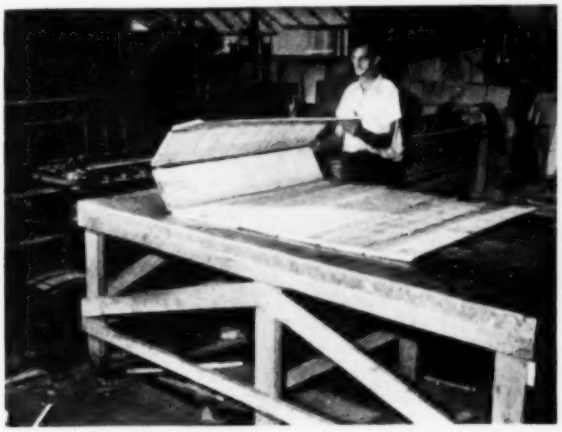




AFTER DRYING, stock is re-ripped to exact width (left) and equalized for length (right)

Assembly and inspection . . .





STAVES are fed into assembly machine (left), and finished section (right) is inspected

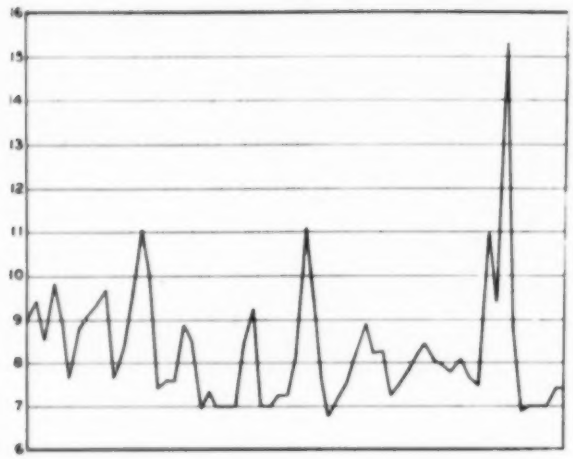
Strapping and shipping . . .

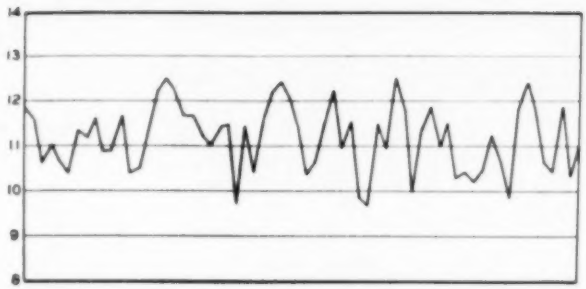
STEEL STRAPPING finished sections on pallets (left) is followed by loading into railroad cars with fork lift truck (right)

stock with no crackage developing after the lumber or the finished goods were stored for some time. The product involved was a very large and expensive one. We were manufacturing this container out of hardwoods that we secured locally.

"In an initial effort to obtain seasoned wood we contacted a local kiln drier to have him season the lumber for us. The results were not good and our customer rejected two carloads of finished goods. Then we purchased a kiln and set up a quality control program to hold the moisture content to a range that would produce the desired stability in the wood, and do it economically. With our new kiln operation, customer complaints have ceased—an important point.

"Much of the importance of our story lies in the success that we have had with resawn lumber. Initially we were drying 4/4 sawn lumber, and we found that a kiln charge took a week to 10 days—sometimes two weeks. Our production was seasonal, with extremely high peak loads, and the situation seemed to demand either





GRAPHS showing "before and after" ranges in moisture content of hardwood used in General Box Co. operation: (Left) Former erratic range from below 7% to well over 15%. (Above) Uniform control now maintained between 9.5% and 12.8%

more kiln capacity or an outside supplier to help out on the rushes.

"The latter we had tried with little success. The former would take space which was not readily available, and would probably result in kilns that would lie idle for months on end. Neither way seemed to offer a solution.

"We tried resawing the green lumber into ¾ in. thick pieces, fully expecting much warpage and a high degree of scrap. Instead, we found that we had made these gains:

"1. A kiln charge now could be conditioned in three to four days—a saving of up to 50% in kiln time. This would permit us to keep ahead of production requirements and to handle a 50% increase in output if necessary.

"2. The green lumber was much easier to resaw. While the saving in actual saw time was not too high, a substantial saving was effected in saw maintenance and, indirectly, an increase was made in the time a saw could be kept effectively busy. On green lumber a saw blade could be used for about three hours—on seasoned lumber it was not uncommon to change it 10 or 12 times a day. Each change took an average of .15 man hours.

"3. We found a substantial saving in the labor needed to prepare the lumber for the kiln. With 4/4 lumber it required three or four men to stack the pallet loads for the kiln in the yard. When we resawed the lumber before drying, we found that one additional man on the 'off bearing' operation was quite adequate.

"4. We found that waste was not appreciably great."

100th ANNIVERSARY CHAIR INTRODUCED BY THONET

On the occasion of its 100th anniversary in the United States, Thonet Industries, Inc., has introduced its "100th anniversary chair", illustrated herewith.

Joe Adkinson, Thonet's designer, uses a V-shaped laminated base reinforced by stretchers to make this chair look different. Pleasantly shaped, molded seat and back and an unusual arm arrangement of narrow, curved laminated strips are features of the graceful advanced design. A new bonding process joins back panel and back support of the all-wood back.

The new chairs are available with or without arms, with wood seats and wood backs, or upholstered. Choice of finish is natural maple, walnut, mahogany or black enamel.

The "100th anniversary chair" has been displayed at the "Furniture by Thonet" exhibit held at the Museum of Modern Art, New York, beginning August 12 and continuing through October 4. This exhibit gives a retrospective presentation of Thonet achievements during the past century.

Known as inventor of bentwood chairs, Thonet was also instrumental in the development of tubular steel and laminated molded wood furniture. Today the firm makes furniture especially engineered for use in public rooms, including hotels, restaurants, clubs, schools, hospitals, institutions, stores and others.

Founded in Austria in 1830 and established in the U. S. A. in 1853, the firm maintains sales offices in New York, Chicago and Statesville, N. C., with factories in the latter city and in Sheboygan, Wis., and York, Pa.

Vacationing in Chicago? Be Sure to Take the Family to See the New HARDWOOD EXHIBIT Museum of Science and Industry, 57th Street and South Shore Drive

THONET'S new "100th anniversary" chair has V-shaped laminated base, molded seat and back, comes with or without arms

1 MATERIAL used by Conant Ball to protect corners and edges is cut to length on swing saw

2 VARNISHED FURNITURE of early American design is first wrapped in layers of kraft paper

3 WRAPPING PAPER is seamed together with strips of creped cellulose wadding on gummed tape

4 STRIPS of new packaging material are fitted on corners and edges to prevent pressure marks

5 CONANT BALL avoids waste by using odd ends of material as added surface guards

6 GUMMED TAPE is used to hold new packaging material in place preparatory to cartoning

New Packaging Method Guards Furniture Finish, Ends Complaints

Day Saved for Varnished Pieces as Conant Ball Co. Solves Pressure Marking Trouble With New Material

THE CONANT BALL CO. of Gardner, Mass., maker of quality furniture for 101 years, has discovered a solution to a packaging problem which was causing considerable trouble in the form of customer complaints in the shipping of traditional furniture.

The trouble started a few years ago when railroads put into effect a regulation requiring ¾ in. clearance inside cartons to be shipped by freight and the firm began to use strips of corrugated pads to protect edges and corners. This worked out all right for lacquered modern pieces, but when it came to the traditional line of buffets, Welsh cupboards and desks and tables of early American design which are finished with several coats of varnish, company officials were dismayed to find that the piling of carton on carton in freight handling caused the corrugations to be "printed" on the finished surfaces.

This could have had grave consequences, particularly to a firm long boasting of scratchless shipping. To make matters worse, the trouble increased at times when demand was greatest and shipments had to be made with the utmost speed, but even an increased drying period did not help matters.

Complaints from dealers and distributors rained in. Re-coating at the destination did not suffice, and frequently it became necessary to strip down the piece and refinish the surface after the furniture had arrived at its destination. In many cases where dealers made shipments to customers in the original cartons, the

7 CARTON is dropped over piece and sealed for shipping, during which new packaging material used by Conant Ball Co. prevents pressure markings on varnished furniture surfaces

pressure marks brought rejections which were costly and embarrassing.

George Mossman, head of Conant Ball's service department, and Jim Faucher, shipping foreman, tried a variety of experiments to solve the problem. Layers of kraft paper under the corrugated pads were increased and any number of cushioning materials were inserted between the corners and the corrugated strips. Nothing seemed to work very satisfactorily.

Then it was discovered that the use of Kimpak, a creped cellulose wadding, solved the "print" problem, but this necessitated cutting strips of the wadding to various lengths with a resultant increase in packaging costs.

Herbert Brooks, treasurer of Conant Ball Co., took his problem to Loring Chandler of the New England Wooden Ware Corp., supplier of packaging materials. The use of a new material called Menashapak, made by the Menasha Wooden Ware Co., Menasha, Wis., was suggested, and the vexatious problem was solved.

The new material is 5-ply corrugated board faced on one surface with a cushion of the creped cellulose wadding mentioned above mounted on a tough flexible backing. This material is now shipped to the Gardner firm in strips 48 in. long and 8 in. wide. These strips are delivered partially cut lengthwise down the middle so they may be easily formed to fit around corners and edges.

The length most frequently used is 48 in., but for shorter lengths a bundle of 12 strips may easily be cut on a swing saw. There is no waste, for the odd ends are laid flat to give added surface protection.

It is now the practice of the Conant Ball shipping department to wrap the piece first in two layers of kraft paper. The paper is seamed together by strips of creped cellulose wadding mounted on gummed tape. Strips of the new cushioned 5-ply board are then fitted to the corners and edges and held in position by 3 in. bands of gummed tape and string. Odd pieces are also taped in place to increase the cushion effect. In the case of round pieces such as table tops, the strips are not bent but placed flat on the kraft paper.

The carton is then dropped over the piece and sealed. This procedure is followed in preparing chests, highboys and bookcases for the wooden crating which is built around the base of the heavier pieces before they are inserted in the cartons.

The Conant Ball Co. now uses a carload of the new packaging material every three months, divided between its Gardner and Templeton plants.

According to Mr. Brooks, use of the material has eliminated complaints of pressure markings, and packaging is now accomplished at normal speeds without the loss of time and expense formerly required to build up strips of cushioning material under the corrugated corners. This job is now done in one operation.

Thus, the new packaging material has saved the day for varnished furniture, and the beautiful Colonial styles and traditional pieces will continue to grace the nation's homes.

New AWPA Standards Issued

One new and several revised standards for the AWPA Manual of Recommended Practice have been announced by P. D. Brentlinger, President of the American Wood-Preservers' Association.

The Manual is a technical handbook of value to preservative manufacturers, producers and users of treated wood, inspectors, and chemists.

The new standards will be sent to all owners of AWPA Manuals. The revisions, or partial revisions, include in some cases only editorial changes, but most of the items involve new or revised specifications approved at the 1953 Annual Meeting, such as:

Addition of five preservatives as Association standards—acid copper chromate, ammoniacal copper ansenite, chromated copper arsenate, chromated zinc arsenate, and copperized chromated zinc chloride.

Revision of general requirements for preservative treatments by pressure processes.

Revision of specific requirements for pressure treatment of lumber, timber, bridge ties, mine ties, piles, poles, posts, crossties, switch ties and wood blocks.

Addition of pentachlorophenol in treatment of incised pole butts.

New list of brands used by suppliers of poles and piles.

The AWPA Manual is available at Association headquarters, 839 Seventeenth Street, N. W., Washington 6, D. C., price $7.50 per copy.

Ohio FPRS Meets October 9

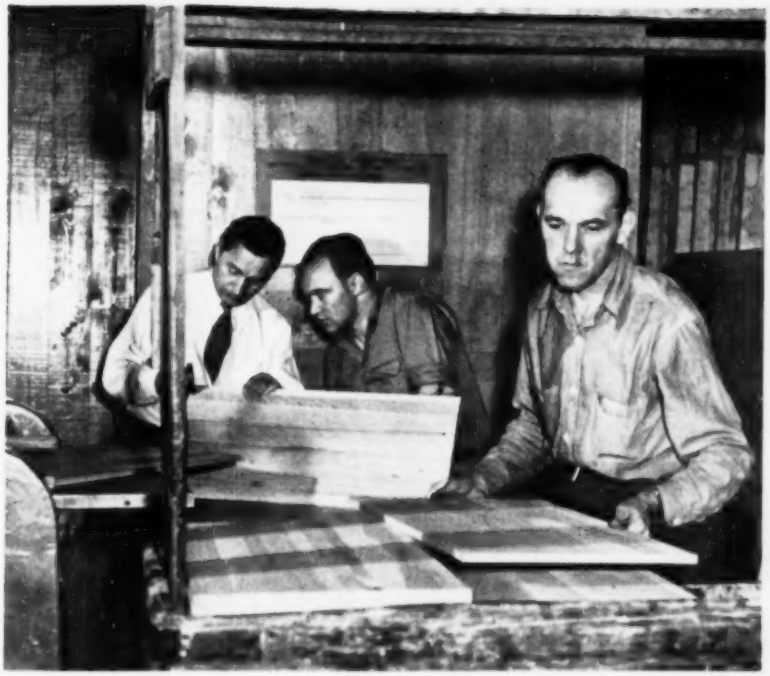
The Ohio Valley Section, Forest Products Research Society, will hold its fall meeting October 9, at Cincinnati, Ohio. The Baldwin Piano Co. will be host. Those attending will tour the company's plant and see the many woodworking operations involved in the manufacture of pianos.

The morning technical session, business meeting and luncheon will be held at the Hotel Alms. A luncheon speaker will discuss research and the future of wood.

Further details are available from the section secretary, Richard L. Burkhart, Swain Industries, Seymour, Ind.

RIGHT—Close co-ordination between inspector, foreman and operator results in sustained quality at planer

ABOVE—Size, moisture content and construction of incoming veneer panels are checked against written inspection standards at Singer's



10-Point Plan for Setting Up a Quality Control Program

How to Develop, Sell and Keep Program Working All Along Production Line for Better Quality End-Goods

By **RICHARD C. CALAHAN***

Article I

SCIENTIFIC MANAGEMENT has long recognized the need for the inspection function in manufacturing. The rapid trend of furniture manufacturing to the mass production techniques, in a market still imbued with the expectation of the skilled craftsmanship of the Hepplewhites and the Sheratons, will inexorably lead to an ever-increasing importance of the inspection function.

Recognizing these basic trends and being confronted with the inevitable quality problems of the postwar era—the great emphasis on production, the rapid turnover of personnel, etc., the author became intrigued by reports of that new and startling management tool known as *statistical quality control*.

A comprehensive study of the principles and techniques, and of the problems of organization for quality control, convinced us that the statistical quality control approach held great promise in the furniture manufacturing industry as a means of controlling quality all through the production process.

Our worldwide reputation for quality cabinetwork had for years been maintained by reliance on old, dependable and experienced personnel who certainly had merited that reliance. A bay inspection system, in which parts are inspected at the conclusion of each of the three major manufacturing phases—machining and sanding, finishing, and assembly—was and still is, to a large extent, in effect.

The need for control of quality all along the production line rather than at three selected points became crystal clear. To discover after 20 machining and sanding operations that the first operation was defective is very costly and highly disconcerting.

From this background, from personal experience in setting up a quality control program and from a study of the experiences and pitfalls of others, a 10-point program for organizing and developing a quality control program in a cabinet manufacturing plant is suggested here.

It should be strongly emphasized at this point that there is no definite pattern which will fit and be successful in all manufacturing activities. The complexion and character of each business enterprise is different, and to be successful, the quality control program must be completely compatible with that enterprise's way of doing things.

1. Define Your Quality Problem. A clear definition of precisely the nature of the quality problem is basic. Perhaps the quality problem stems from excessive customer complaints, perhaps the problem lies in producing quality suitable to meet competition, or perhaps the problem lies in the amount of rework, repair, and scrap involved in achieving the desired end-product quality.

2. Develop an Overall Plan. In a manufacturing operation of size, the development of an overall plan for installation of quality control is a major consideration. In our case, since a complete simultaneous installation was impossible, it remained to develop a logical sequence of installation.

Experience had shown that the principal quality problem in the early stages of manufacturing stemmed from

*Asst. Superintendent, Inspection Dept., Singer Mfg. Co., South Bend, Ind.

defective material. Thus it seemed quite logical to establish first an inspection screening of this incoming material. At present, this quality control of material is established on rough veneered panels from our other factories, purchased lumber, hardware, and a few other miscellaneous items.

Having established the control of quality of incoming material, quality control charting techniques are now being applied to the veneering, machining and sanding operations. The program will be extended to the finishing and assembling stages of production.

3. Sell the Program to Management. Unquestionably, the first big hurdle to overcome in establishing a quality control program is to sell the program to management. Certainly, management must recognize a need for quality control. The presentation of well-founded estimates of cost reductions (more than sufficient to support the program) is a necessity.

It is further suggested that several well-chosen trial installations can be of great value. If successful, they are more potent than words in selling the quality control idea.

4. Establish a Quality Control Staff. Many, many thoughts have been uttered and written in recent years concerning the place of the statistical quality control group in the industrial organization chart. In our case, a well-established inspection department has existed for years. This department is headed by the superintendent and assistant superintendent who report to general management at the same level as the production departments.

Some 60 inspectors, most of whom are on a piecework system of pay, are directly supervised by three inspection foremen. In recent years, a "technical inspection" group of five men was added to the department. These men were essentially roving inspectors in the machining stages of production.

With such an organization existing, it seemed illogical to establish a separate quality control group.

The "technical inspection group" formed a natural nucleus around which to develop the program. The quality control staff, as such, consists of two men, a quality control engineer and a quality control co-ordinator. We were fortunate in being able to obtain the services of a wood technologist who had completed graduate work in quality control as applied to woodworking.

The quality control engineer is essentially responsible for developing the technical aspects of the system and the establishment of statistical sampling techniques. The quality control co-ordinator is primarily concerned with developing the promotional aspects, publicity, training programs, quality report systems, etc. This man was chosen from the existing group of technical inspectors.

For most woodworking plants, it is suggested that a logical approach might be to select a young, alert engineer within the organization—one who has displayed outstanding ability to get along well with others—and send him to one of the 10-day condensed quality control courses offered by leading universities. Several highly successful quality control programs have been started that way.

5. Set Goals and a Time-Table. It is as essential to a quality control program as it is to any promotional venture (and that, indeed, is what a quality control program is) to have some well-defined goals set and to establish a time-table for accomplishing them. Such a plan will tend to prevent the quality control program from becoming merely another "bureaucratic appendage" in an organization.

6. Sell Quality Control at All Levels. To achieve the maximum of success, all levels of the organization must be sold the quality control idea.

In the program under discussion, a training course consisting of five 1½-hour sessions was developed to explain the technical principles, aims and methods of statistical quality control to supervision. The value of allowing time for discussion should be emphasized, for much can be learned from the questions of operating personnel.

A rather extensive manual was also prepared to supplement the course. It is well to suggest that careful thought be given to the problem of explaining statistics to "old line" foremen.

This training course has been given to all members of management, all department heads and to about 40 foremen, setup men and technical personnel, including engineers and time study men. As the quality control program progresses into new areas of operation, foremen so affected are given the training course.

Full use of plant newspapers, bulletin board releases, employee letters, etc., should be part of the basic planning for quality control. The existence of adequate lines of communication between workers and all levels of supervision is vital.

Dr. J. M. Juran has reported that in a survey of 39 companies who had installed quality control, the biggest single cause of failure lay in not securing the active participation of shop personnel.

While it is time-consuming, the author has found it highly rewarding to talk personally with each operator (in the presence of his foreman) before setting up statistical quality control on his operation, explaining in simple shop language what the average line, control limits, etc., are, what the overall plan is, and why quality work is essential to the company's well-being and thus to his well-being.

In all cases the operator is asked for suggestions as to ways and means of

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HAVE *YOU* TRIED QUALITY CONTROL?

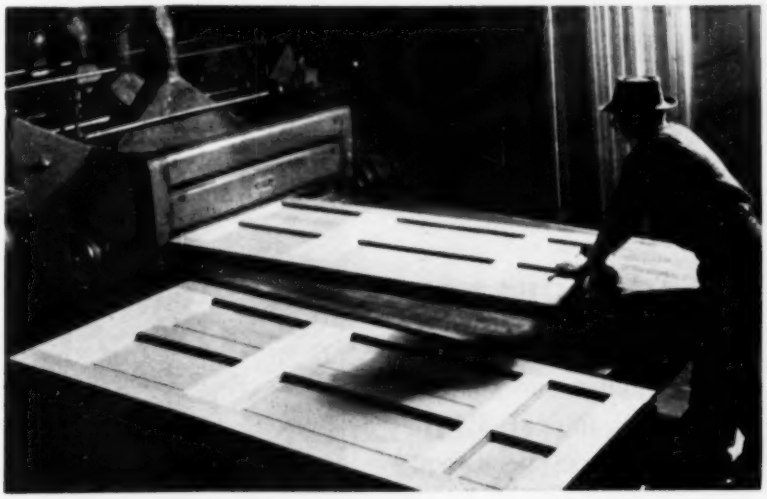
During World War II, statistical quality control techniques proved a most potent factor in America's remarkable war production program. These techniques had their origin many years before in the recognition by the metal industries that no two parts were *exactly* alike, that variations were always present. When dimension tolerances were set up, random assembly and interchangeable parts became a reality, and true mass production was on its way.

Yet only recently have these fundamental trends in American industrial production begun to make their impact felt in the manufacture of furniture, cabinets and other products of the wood industry. As mass production grows in this field, so does the need for adequate quality control. As Mr. Calahan points out, it is costly, inefficient and upsetting to discover, after a product has passed through 20 machining and sanding operations, that the first operation was defective. How often that happens in the wood field!

Recognizing that a sound quality control program can contribute much to the production of better quality end-products at lower cost, WOOD & WOOD PRODUCTS presents here the first of two highly practical and timely articles on the subject by a man who has been "through the mill" and is living with quality control every day. Adapted from the paper presented by Mr. Calahan at the 1953 meeting of the Forest Products Research Society, Article 1 offers a 10-point plan for setting up and operating a quality control program. Article 2 will describe five case studies that show how such a program works in actual practice. Watch for it in November WOOD & WOOD PRODUCTS!

Meanwhile, if you have ideas or problems involving quality control—or if you have had a successful recent experience with such a program in the wood field—let's hear from you.—*The Editors.*

GOOD TIPS on all types of sanders and sanding operations are offered in accompanying article



When and How to Use Different Types of Sanders for Best Results—Grit Sizes and Other Details

By O. B. GORDON*

Practical Hints on Sanding for Better Finished Goods

SANDING IN most woodworking plants is classified into three different categories: sanding before finishing, sanding intermediate finishing coats, and wet-sanding the finish coat. We are limiting this discussion to sanding before finishing. . . .

Each sanding operation in a plant should be considered in its relation to all other preceding and succeeding sanding operations, and it should also be kept in mind that the kiln drying and other machining operations have a direct bearing on sanding.

There is very little real economy effected by using too coarse grits on the multiple drum sander if this results in additional belt polishing; nor is there any economy in a poor sanding job in the sanding department or cabinet department which results in excessive sanding in the finishing department.

There are so many varying conditions in different plants and such wide differences of opinion among sanding operators, supervisors and executives as to what is the best sanding procedure that it would be almost impossible to outline a definite procedure which would meet with general approval. Therefore, our remarks as to procedure and grit sizes are not to be taken as definite recommendations, but rather as a general overall procedure subject to revision to suit specific cases. . . .

For purposes of this discussion, we will consider that a well-sanded surface is a surface where all machine marks and other irregularities have been removed and the wood fibres cut down and the abrasive scratch marks eliminated or reduced to the point where the wood surface may be satisfactorily finished. To obtain this desired result, we suggest the following general procedure.

In most plants, the first sanding operation is on the multiple drum sander. There are several different types of multiple drum sanders; i.e., endless bed, roll feed, straight jaw, and spiral drum. . . .

Some plants use a drum sander as a planer and, in addition to sanding very roughly machined stock, they flush dust panels and on the same machine try to do a good job of sanding face veneers. The results are seldom satisfactory. Other plants do a very excellent preceding machining job which enables them to use fine abrasive grits on their multiple drum sander.

Some plants have one machine with coarse grits for miscellaneous jobs, and another machine with finer grits for veneered panels and accurately machined solid stock. Also, many large plywood manufacturers and furniture manufacturers have discontinued sanding large veneered panels on the drum sander because of the frequency of sanding through veneers. Instead, these people rough-sand the large veneered panels with a double belt, generally using 1/2 grit for rough sanding and 2/0 for intermediate.

Where there is only one multiple drum sander in a plant and it is used for general work including the sanding of solid stock, glued-up frames and veneer panels, a common abrasive grit selection is No. 40 (1-1/2), No. 60 (1/2), No. 100 (2/0) or No. 50 (1), No. 80 (0), No. 120 (3/0). When sanding veneered panels, the first drum is frequently raised clear, thus using only the last two drums.

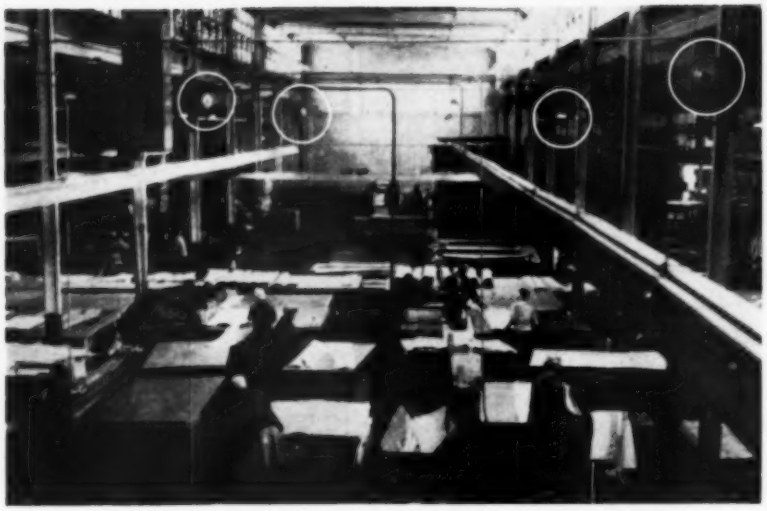
In plants which do excellent ma-

Continued on Page 71

*Products and Equipment Engineer, Behr-Manning Corp., Troy, N. Y.

Double Savings in Humidity Control for Wood Industry

Both Supplier and Customer Gain by Improved Product Quality, Splicedwood's Plant-Wide System Proves



FOUR humidifying units placed for thorough control in Splicedwood's splicing and jointing department

TWO of four humidifiers in "tempering" room where spliced veneer is stored and conditioned

FROM TIME TO TIME, stories are heard in the field about suppliers of panels, plywood, veneers and dimension stock delivering their material in good condition to customers for utilization in the manufacture of furniture, cabinets and other finished goods, and then, after a period of storage in the customer's plant, receiving a "defective goods" complaint. Rather than jeopardize his relations with a desirable customer, the supplier takes back the "defective" material and replaces it without charge, although he is fully aware that the material left his establishment in sound condition and that the real cause of the rejection was the customer's disregard of the need for proper humidification of key production and storage areas.

Of course, there are other instances where defective goods will find their way into a customer's hands and must be replaced, no matter how diligently the supplier may strive to guard against such slipups. And there are cases where the supplier fails to take the necessary measures in his own plant to protect the material against drastic moisture content changes.

Rejects and replacements are costly, both to the supplier and to the customer. Though the latter may believe he is getting away with something by making the supplier take back and replace the material "without charge," he is indirectly paying for this "service" because rejects and replacements must be figured as a part of the supplier's overall cost of doing business and thus are reflected in higher prices for the material to all customers.

Citing recent cases where suppliers had been forced to replace rejected panels, dimension stock or other "defective" material, one humidification engineer recently stated the two-way problem and its solution in these words:

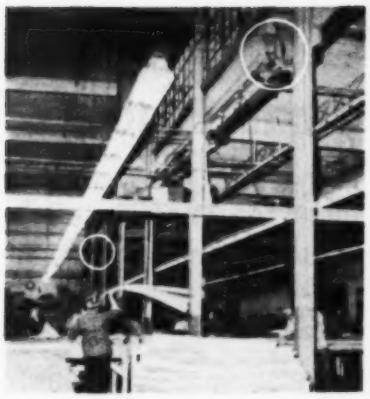
"As soon as the suppliers realize that many of these reject cases are not their responsibility but are the result of improper storage by the assembler or manufacturer, they will start refusing to replace such materials. If they would humidify their own plants they could then tell the purchaser, 'Our plant is properly humidified, and when those panels left our plant they were in perfect condition, so we cannot be held responsible for warpage which occurred in your plant as the result of improper storage conditions.'

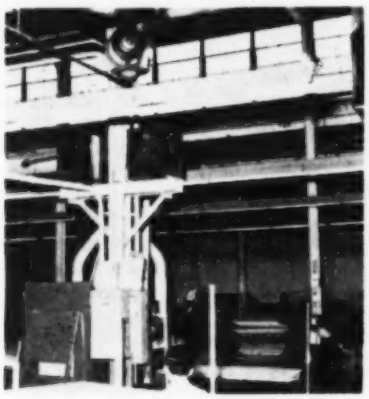
"The assemblers and manufacturers of various wood products would then realize that they could no longer make the suppliers bear the brunt of the loss and would themselves take steps to assure proper humidity conditions in their own plants. The result would mean savings of hundreds of thousands of dollars annually in stock. Not only would this waste be prevented, but the quality of the finished goods would be improved and the ultimate customer would get a better product at lower cost."

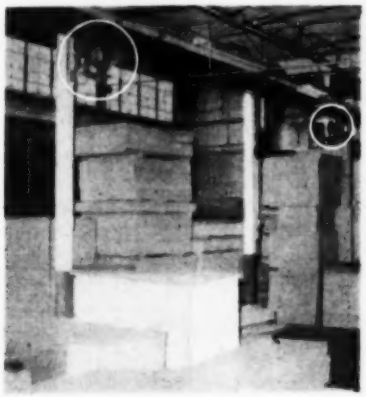
Moisture Content Vital

One of the most important single factors in determining the fitness of wood is its moisture content, both during manufacture and in the end-use. Yet the wood industries as a whole have lagged far behind other important industries in installing the humidifying and other air conditioning equipment necessary to maintain moisture content at the correct point.

For example, the textile industry, which likewise has to contend with materials that are subject to variations in weight, quality and fitness as moisture content of the material varies, has considered humidifying







SPLICEDWOOD's plant-wide humidity control system serves (left) matching and layup department, (right) gluing and press room, (left below) sizing and sanding section, (right) finished plywood storage area

equipment a "must" for more than 50 years in both old plant modernization and new plant construction. In fact, that industry has now progressed to the point where the majority of new installations call for complete air conditioning and not humidification alone. The textile industry has learned that the economic results mare than justify such installations.

The exceptions that prove the rule in the wood field are those scattered plants which do boast humidification equipment and will readily testify that humidity control pays for itself in a short time. It is interesting to note that most plants in this industry that purchase humidifying equipment for a single department or area usually follow through with subsequent purchases for all other parts of the plant that require humidity control.

Fully integrated companies that handle wood from the tree to the finished product are also able to show important savings when they provide for proper humidity control in their operations. For example, a number of plywood and veneer manufacturers with humidified operations are now in a position to advise their customers that all material leaves their plants at the proper moisture content for use, so that difficulties arising in the products at the point of use are undoubtedly caused by improper handling of the material *after* shipment.

The result is bound to be substantial savings to the supplier in terms of replacement goods. The purchaser, too, reaps big savings in the assurance of proper quality in incoming material. Frequently, it is reported, customers in such cases have installed their own humidifying equipment in order to capitalize fully on the quality of the materials received from suppliers with humidified plants.

An outstanding example of a plywood manufacturer who has benefited from the installation of adequate humidity control equipment is the Splicedwood Corporation, whose new plant at Ashland, Wis., is completely humidified. How well this progressive step has paid off is attested by Gus A. Seidel, vice-president of Splicedwood, who told WOOD & WOOD PRODUCTS:

"Since the installation of our humidifiers, many of the problems of buckled and wrinkled veneers and warped plywood have been eliminated."

Several years ago, when the Splicedwood Corporation's Ashland plant was still in the planning stage and careful thought was being given to the design of a plant layout that would permit a smooth flow of materials through all operations, it was realized that to assure a high-quality product it would be necessary to have all components of the plywood "conditioned" to the proper moisture content before assembly in the press room.

To accomplish this end, a veneer storage or "tempering" room was incorporated in the layout. All veneers, after being spliced ready for layup, were to be stored in this room and "conditioned" before being sent to the press room. Four humidifiers with one master control were installed to keep the room at a constant humidity which would give the veneers an 8% equilibrium moisture content.

Humidity Control's Value

"The operation of the room," Mr. Seidel reports, "soon proved the value of proper humidity control. It was then determined that the control of moisture was just as important in the processing of veneers through the jointing and splicing operations. Also, if it was important to control the moisture content of the veneers throughout the processing, it was certainly logical to protect the finished plywood in the same way.

"For these reasons, we decided to humidify the entire plant. We investigated various types of humidification equipment and finally decided in favor of the centrifugal water atomization type we had installed in our tempering room.

"Eighteen additional humidifiers and four control units were purchased. The humidification engineers surveyed the plant and supplied us with a recommended layout showing where to locate the units.

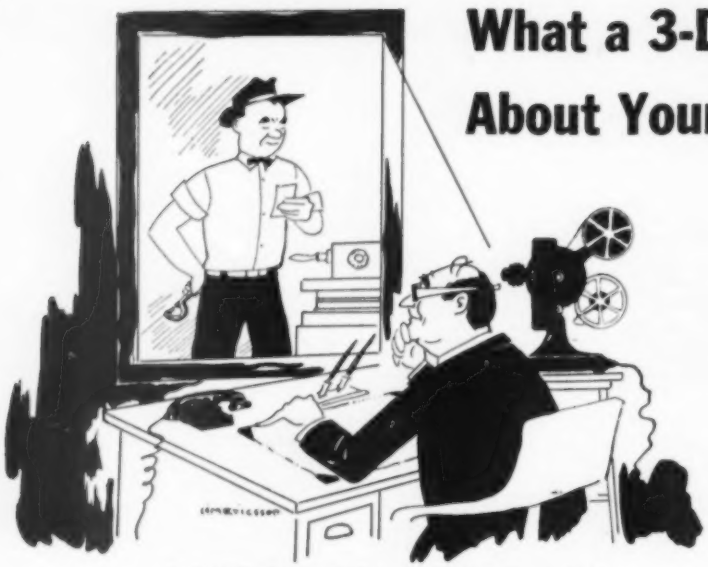
"The actual installation was quite simple and was accomplished by the regular maintenance department. The operation is relatively troublefree. By setting up a regular schedule for periodic cleaning, only one unit at a time is shut down, allowed to dry and brushed off."

Since the installation of humidifiers throughout the plant, with all components of each piece of plywood conditioned to the same moisture content, Splicedwood has been consistently producing panels which are in "perfect equilibrium," thereby eliminating much of the possibility of warpage developing, as Mr. Seidel pointed out.

What a 3-D Look Will Reveal About Your Foreman Problem

Ideas for Improving Relationship of the Foreman to Hourly Employees, to Production, to Management

By LAWRENCE STESSIN*



"VIEWING THINGS in the third dimension"

THE FASHION of viewing things in the third dimension these days might well be applied to the foreman's role in human relations. The 3-D aspect may reveal embarrassing sidelights to some of top management's thinking and methods. If it does, and remedial action is taken, we may have achieved another step in developing America's foremen into a more effective force in industry.

In order to fix a focal point for a 3-D view of the problem, suppose we establish the first dimension—*the relationship of hourly employees to their production.* It seems safe to assume that progressive management realizes that high productivity, among other things, depends greatly on the attitudes of workers, *the human element.*

The second dimension involves *the relationship of the foreman to hourly employees.* Since he functions as management's eyes, ears and voice on the production front, the proper attitude of employees will depend largely on how well he plays his role as a human relations representative.

An analysis of what management expects of a successful foreman shows that an extremely large percentage of his success is based on social qualities —his contacts with people—human relations. If he operates on the principle that supervision is getting jobs done *through people* and not by direct orders or doing the jobs himself, his role will include that of interpreter for management. To illustrate:

Management expects a foreman to be able to:

- . . . Translate management policy.
- . . . Administer necessary correction and maintain proper discipline.
- . . . Apply general policies of management.
- . . . Show workers how to do jobs correctly.

A successful foreman's human relations will result in:

- . . . Terms workers will understand.
- . . . Helping rather than damaging motivation and morale.
- . . . Adapting them to characteristics of individual workers.
- . . . Their *wanting* to do the job the right way.

The degree of adroitness with which a foreman practices daily human relations with his people largely depends on his understanding that compensation is not the only reason why people work. In order to utilize their desire for security, advancement and recognition, he applies his knowledge of the psychology of each individual's abilities, training, experience, interests, desires, motives, goals, ambitions, attitudes and personality characteristics.

Dollars-and-Cents Effectiveness

Management can estimate how well a foreman is succeeding in his human relations role by checking a few questions. The impact of the answers on costs, production, quality and accidents can be translated into dollars

*Vice-President, National Foremen's Institute, New London, Conn.

ARTICLE 3 IN TIMELY SERIES FOR MANAGEMENT

So much depends on supervision—cost control, employee morale, elimination of bottlenecks and other threats to sustained production efficiency—that progressive management in the wood industries, as in many other fields, is constantly seeking ways and means to improve the calibre and capacity of its foremen.

To help its management readers, as well as plant superintendents and foremen among its subscribers, WOOD & WOOD PRODUCTS has arranged with the National Foremen's Institute for the exclusive publication of this series of articles on various phases of the foreman problem. In addition to the handling of foremen's gripes, hints on better foreman training, and the foreman's role in human relations, the subjects of the first three articles, the series will also cover the foreman's part in management and the contributions to effective cost control which good supervision can make.

In his work for the National Foremen's Institute, Mr. Stessin visits about 100 plants a year to discuss problems of foremen and labor relations in general with top executives, supervisory personnel and workers. He also is assistant professor of management at New York University.

The wood industries as a group still have a long way to go in training and getting the most out of their foremen, and this timely series should stimulate much constructive thinking and action in that direction. If you have foremen's problems, or if you are a foreman with a thought or two that may help the cause along, by all means let us have your ideas on this highly important subject.—*The Editors.*

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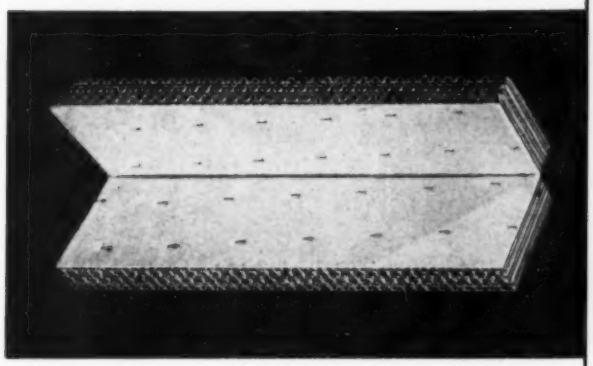

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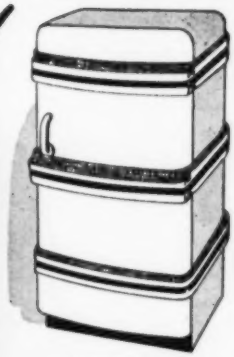

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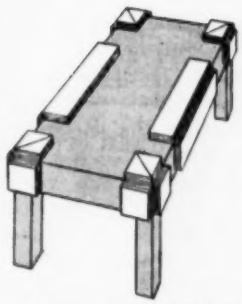

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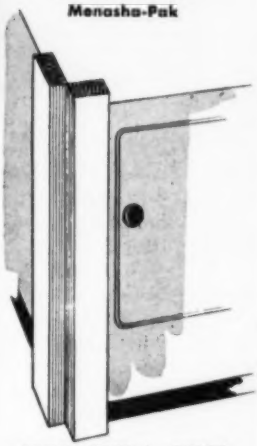

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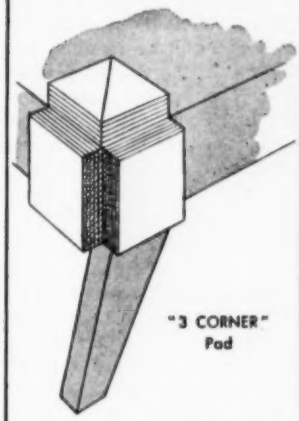
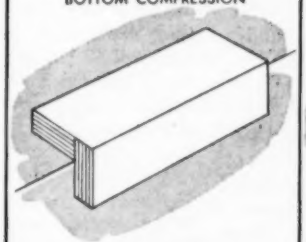


"3 CORNER"
Pad



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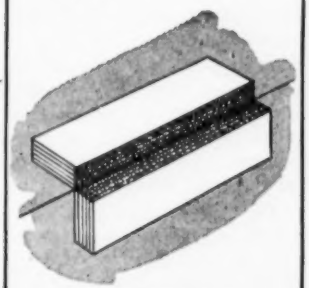

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and cents. A "yes" answer will indicate that his human relations activities tend to reduce costs and accidents. A "no" answer would most likely mean that production and quality are adversely affected. The questions:

1. Is every worker in the job best suited to him?
2. Is supervision of the operation complete, calm, friendly, firm?
3. Does the department function smoothly?
4. Are employees properly trained?
5. Is there a feeling of enthusiasm, pride of accomplishment, loyalty to the company?
6. Are difficulties—grievances, conflicts with other departments, disciplinary matters—ironed out with the minimum of friction?

It is evident that management's dependence on the foreman in human relations at the worker level is almost total. The foreman must be able to play his role consistently and effectively or much is lost. With a steadily rising percentage of costs applied to payroll in contrast to materials and supplies, the human element grows increasingly important.

In many companies, authorities agree, overall human relations *philosophy* is sound, but its *execution* is faulty. As a rule, where it falls down, it does so at the point of contact with the worker.

Does the foreman stand alone at this crucial point? A superficial glance would lead one to believe that he does. It is his job. Success or failure depends on how well he trains, directs and stimulates the productive efforts of his people. But, if we take a third dimensional view we see another fundamental relationship.

The third dimension is *management's relationship with the foreman*. It is in this area that we may find strange reflections of policy and gain the most vital perspective of the future. For it is here that some members of management say, in effect, "Don't do as I do; do as I say."

What is it that we say to foremen on the subject of human relations? If they receive formal training, certain steps are outlined that they are to use as a guide in dealing with their people on a day-to-day basis. If their human relations techniques are self-taught or absorbed by a special kind of osmosis (a peculiar ability of many good foremen), there is a general similarity in action.

Suppose we arbitrarily select a few of the principles by which the better foremen maintain commendable human relations. Then, suppose we consider these same principles through 3-D glasses in terms of management's human relations practices involving their foremen.

"GOOD MANAGEMENT adds to the foreman's stature"

A foreman must have the respect, confidence and cooperation of his department. According to "Human Relations and the Foreman,"** "He must be a foreman in the eyes of his workers. Only when they regard him in that light will he be in a position to use his knowledge and abilities effectively. Only then will his workers be inwardly 'for him.' Only then will they really want to do a good job, and will feel that the company is a 'swell place to work!"

The major responsibility for such attitudes is seemingly the foreman's. But, as our three-dimensional view reveals, some onus is projected to the shoulders of top management as well. Many companies are aware of this. Their treatment of a foreman adds to the foreman's stature, helps him maintain the position of leadership.

How Not to Do It

In one midwestern firm I saw young, third-shift foremen being detailed as gate-openers and checkers at the company's recreation area several miles from the plant. The theory was that these men were "up" anyhow, a trustworthy person was needed for the early morning chores, and foremen could be depended upon.

The fact that two hours were added to the men's shift time was ignored. The fact that the job was a standing joke among hourly employees at the expense of the foremen was not realized until called to the attention of the plant manager. The practice was stopped.

Occasionally foremen are imposed upon by people higher up. They are asked to make gadgets for use in a superior's cabin cruiser, trailer, summer place, playroom, bar, hobby shop, or what have you. The double standard resulting from such practices makes it difficult for a foreman to function as a real leader. It also negates his efforts to maintain efficiency and discipline. Favoritism is inevitable under such conditions, with resultant lowering of morale among the other foremen.

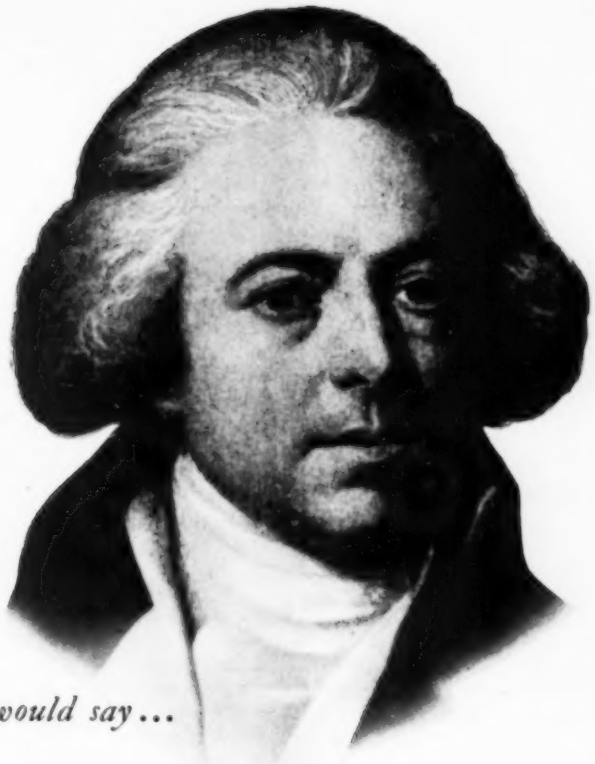
The "bull of the woods" type of foreman who demands that workers adjust themselves to his moods, mannerisms and pet ideas is demanding more than he will receive.

Adjusting our 3-D glasses, we realize that we are staring at a fundamental rule that extends into almost every function of a foreman. It affects his handling of grievances, discipline, transfers and problem workers. It is the basis for effective two-way communications, for instruction, and for every other personal contact he has with his people. Indeed, if we look closer, we can see that it is also a responsibility of management in its human relations with foremen.

Understanding came the hard way to a southern manufacturer several years ago. Traditionally, the various levels of supervision generally maintained formal, impersonal relationships. The foremen reflected the same

Continued on Page 71

**"Human Relations and the Foreman" by John P. Foley and Anne Anastasi. National Foremen's Institute, Inc. 1951.



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Article 12 in Series

Should Cores Be Lumber or All-Veneer?

Reader's Query Stimulates Discussion of Advantages and Limitations of Both Methods—A Look at Future

By THOMAS D. PERRY

QUESTION:

Can you provide us with any reasons why manufacturers of wood office furniture use lumber-cored tops on desks and tables, rather than plywood-cored tops?

Does a lumber core produce a technically better top, or does the advantage lie in lower costs than would be the case with plywood-cored tops?

What reasons other than trade practice and availability prompt the Federal Government to restrict its specifications on desks and tables to units with lumber-cored tops?

We subscribe to WOOD & WOOD PRODUCTS, and our questions are prompted by your article, "Making Lumber Cores for Plywood," in that magazine.

A detailed reply will be appreciated, together with whatever reference bibliography you can furnish us.

Thank you for your courtesy.
—G. C. Thorn,
Sacramento, Calif.

ANSWER:

This is the most discriminating question among the many that have been received the last few months, especially with regard to the basic problem as to why a lumber core or a veneer core is preferable. The answer is not simple, since a number of factors are involved, and it seems worth while to devote enough space to present both sides of the question and allow the reader to decide for himself.

The obvious answer, far from complete, is that most furniture factories making desks and tables are in the hardwood regions and use solid lumber extensively for legs, frames, drawers, rails and other supplementary parts. They are equipped to handle and kiln-dry lumber, are familiar with the lumber markets, and can often use off-grade cut-downs from solid lumber parts for plywood cores. As a natural consequence, they have developed the use of lumber for cores, and their products with this construction have found wide acceptance.

On the other hand, all-veneer constructions in lieu of lumber cores are out of their line of experience. They are not particularly familiar with the veneer market, except for faces and crossbands, and are somewhat staggered at the amount and cost of the glue required for a 5-ply veneer core.

Very few of these furniture factories cut their own veneer and, as a result, they feel that the cost of the single-ply veneer required, and of the grade that they deem necessary, is unreasonably high.

Under these conditions, opinions expressed by makers and users of desks and tables would undoubtedly strongly favor the use of lumber cores, as contrasted with all-veneer constructions. But this general opinion, strong as it might be, does not prove that equally satisfactory desks and tables cannot be made with all-veneer tops. It is an instance where the majority opinion may be no more correct than the minority opinion.

The Case for Solid Lumber Cores

The use of lumber cores is traditional and goes far back in the history of the plywood industry, when veneer was an unusual and special product and lumber was a commodity. Equipment was available for processing lumber, but processes for veneering were mostly manual; the preparation and spreading of glue was by hand, pressing was largely by screw-clamp frames, and the evaporation of the glue solvent in all-veneer constructions was little understood.

Traditions often outlive their usefulness, especially in the wood field, and yield only gradually and reluctantly to more efficient mechanized processes.

Take the example of a plank top picnic table, which was undoubtedly one of the earliest types of tables. With a bit of rationalizing, it is easy to assume that a plywood top should have its strongest and basic layer of thick wood, running lengthwise of the table top. This may be a habit of thinking that unconsciously influences individual opinions about how table tops should be made.

It is entirely true that a plywood top, made on a lumber core with narrow strips edge-glued together, is as nearly warp-resistant as you can make wood.

Another point in favor of the use of lumber cores in plywood tops is the appearance of the edge, either side wood or end wood. Both can be side wood if the core is railed or banded. An ogee molding effect practically conceals the edges of the veneer layers and facilitates a pleasing finish to the ends and edges of a table top.

The Case for All-Veneer Constructions

The background here is quite different, and the development of all-veneer core constructions does not date back nearly as far as that of lumber cores. The location of furniture factories is usually a reasonable compromise between adequate supplies of raw materials and desirable market distribution points.

On the other hand, the location of a plywood factory is most favorable

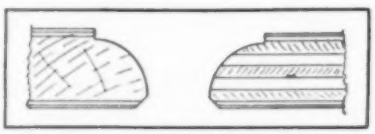

FIG. 1—Ogee edges on table tops: (Left) Lumber core, taking attractive finish. (Right) All-veneer construction, difficult to finish

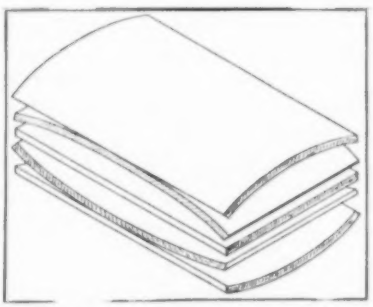

FIG. 2—Layup method to balance curving tendency in all-veneer construction (exaggerated for emphasis)

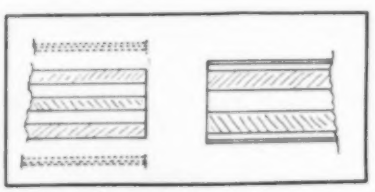

FIG. 3—Types of all-veneer top constructions: (Left) 5-ply core blanks requiring two gluings. (Right) All-veneer type of plywood made with one gluing operation

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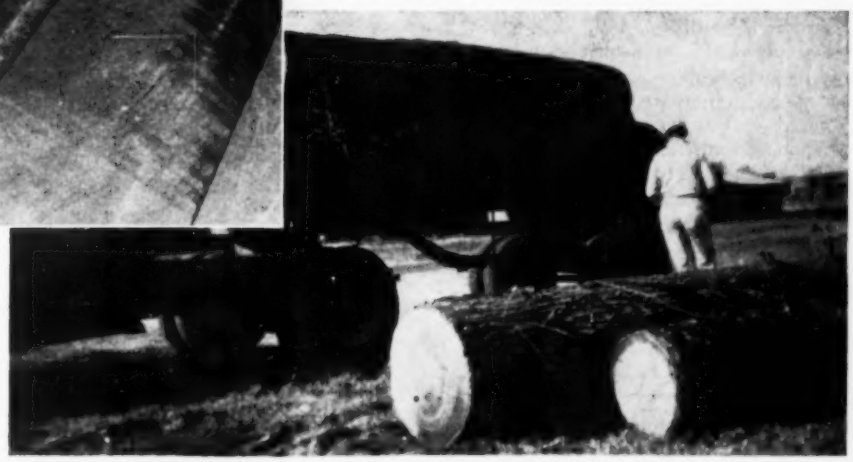

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when it is reasonably near a long-term supply of prime veneer logs. The placing of a plywood factory near a major part of its market, such as a furniture manufacturing center, has not proved nearly as satisfactory. It either has to buy its single-ply veneer from a veneer mill in the woods at a considerable disadvantage in cost, or purchase a veneer mill in the timber area, as a number of plywood factories have done.

Under these conditions, a number of plywood factories sprang up in timber areas during the early years of this century, some of them in the South where gums, poplars and oaks were plentiful. Their sales program was to supply furniture factories that did not choose to make their own hardwood plywood and preferred to buy in standard or custom sizes.

A still larger number of new plywood factories originated in the softwood areas on the West Coast, where Douglas fir was plentiful and proved to be ideal for a new type of plywood that was to find its major use as a structural material in the building industry. A considerable amount of fir plywood was sold to the furniture industry, chiefly for utilitarian uses, where strength and closure requirements were more important than beauty.

These plywood factories, in the South and West, bought the top grade of logs for their veneer, leaving the lower selections for saw logs. Normally they did not have dry kilns or machinery for turning lumber into cores for plywood and had little connections or familiarity with the skillful buying of the grades of lumber suitable for lumber cores.

As their markets developed for heavy plywood, approximately ¾ in. and up (which others made with lumber cores), they took the logical course, based on their experience and equipment, and made thick plywood in all-veneer constructions—for example, a 13/16 in. top consisting of the required number of layers of their local rotary-cut veneer, plus face and back veneers of the desired species. They also supplied all-veneer corestock blanks, 5-ply types, as an alternate for and in competition with lumber core blanks.

At first, some of the furniture factories that bought all-veneer plywood or cores felt that the quality was inferior to plywood made with lumber cores, but as the objections were overcome by experience and better techniques, most of the trade found that their first impressions were not justified. A few were inflexible and still considered lumber-cored tops definitely superior to all-veneer constructions.

After more than 40 years experience in the industry, the writer is convinced that lumber core or all-veneer plywood tops, if properly made, are of reasonably equal merit for table and desk tops. End-use requirements may indicate either one or the other as best.

The all-veneer construction for plywood tops has some advantages and some limitations in comparison with lumber core plywood. If waterproof tops are desired, under standard specifications—(CS-35-49) Type I (fully waterproof)—the maximum thickness allowable for any layer is ¼ in. for high density species such as birch or hard maple; 3/16 in. for medium density species such as gum or tupelo; and ⅛ in. for such low density species as poplar and basswood. This makes an all-veneer construction mandatory and prohibits the use of lumber cores for plywood of maximum waterproofness.

At one time there was a government specification for household furniture for military use in the tropics which permitted plywood tops with a lumber core, but required a completely waterproof adhesive. The only way such lumber core plywood could pass a waterproof test was to make 3-ply test specimens by cutting away most of the core, since otherwise the expansive force of the thick lumber core, under prolonged soaking, would tear the joint apart in spite of the waterproof adhesive.

It was definitely inferior to an all-veneer construction. However, the specification did result in a construction in which the outer veneer layers would not be likely to delaminate under continuous atmospheric exposure in hot, damp climates.

Another advantage is that veneered edges (Fig. 3—E) to match the face veneer will show better adhesion on plywood edges than on the normal end wood of lumber cores. In all-veneer constructions, approximately half the thickness of both ends and edges will be side wood, anchoring the veneered edges more securely.

One of the annoying problems in making plywood with lumber cores is the tendency for core joints to show as slight ripples under a high-gloss finish on the plywood. These are caused by improper drying and planing in ¾ in. lumber cores. While careful workmanship will reduce this to a minimum, it is still somewhat of a hazard. In all-veneer constructions there are no lumber core joints to develop such defects, which are more troublesome in gloss than in dull finishes.

On the other hand, the usual custom of making an ogee edge molding on tops is simple with lumber cores but almost impossible with all-veneer cores. In a lumber core construction with end-banding, all of the ogee face will be side wood which can be attractively finished. In all-veneer construction, the ogee face will be striped and almost impossible to finish.

A few suggestions on making tops in all-veneer constructions may be helpful, since the several questions

Continued on Page 74

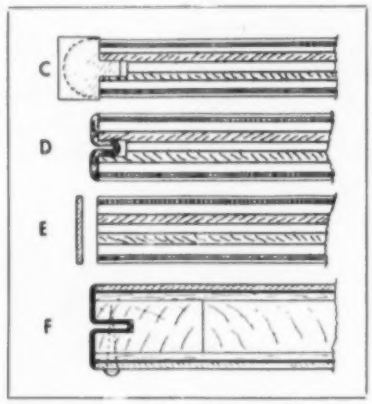

FIG. 4—Standard edge treatments for tops: (C) Protective banded edge for rounding; (D) plastic edge, inserted; (E) veneered edge, glued in place; (F) metal edge, inserted

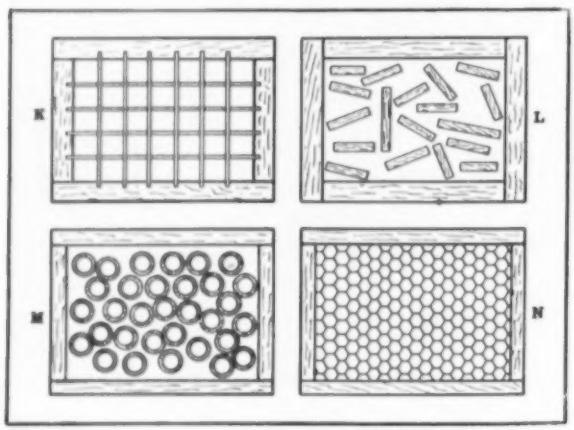

FIG. 5—Some semi-hollow core constructions

THE RIGHT BEHR-MANNING COATED ABRASIVE . . . PLUS THE RIGHT METHOD

Setting new standards in finishing performance

Photo courtesy of Southern Desk Co., Hickory, N. C.

Quick way to sand a molded edge

The problem was to finish molded edges on oak side panels for church pews. Naturally, the workmanship had to be fine. But it also had to be efficient from the production standpoint.

The answer was to run a BEHR-MANNING® 120 grit ADALOX® Cloth Finishing Belt over a formed rubber wheel on a Pearson Sander. The finish was in keeping with the traditionally fine woodwork of church interiors. And it was done efficiently.

This is the way a job was made easier with the right abrasive and the right method. But . . . your finishing problems could be of a different nature and to solve them, we invite you to our nearby BEHR-MANNING Demonstration Room. Here you have the opportunity to consult qualified Product Engineers, experts in the woodworking field, who understand the problems of production. See the latest Coated Abrasive equipment and application methods. Or call your local BEHR-MANNING Field Engineer and have him come to your plant to help with your particular operation and needs. Chances are he'll help you find a way to increase production. Write Behr-Manning Corp., Troy, N. Y., Dept. WP-10.

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38 Named to Raise Research Funds as Frampton Group Launches Drive

As reported in WOOD & WOOD PRODUCTS last month, fund solicitation for the lumber industry's new million-dollar research program is now actively under way.

D. B. Frampton, D. B. Frampton Co., Columbus, Ohio, chairman of the National Lumber Manufacturers Association's 22-man Products and Research Committee, which is initiating the industry-wide program, reports that mechanics for the fund-raising project have been completed and a special group of well-known lumbermen has been designated to raise funds from individual lumbermen and lumber companies located in their respective areas.

Those named to the fund-raising group, in addition to the 22 men listed here last month, are:

John Aram, Boise-Payette Lumber Co., Boise, Idaho; Tom DeWeese, A. DeWeese Lumber Co., Inc., Philadelphia, Miss.; R. H. Ely, Ely-Thomas Lumber Co., Camden-on-Gauley, W.Va.; George Flanagan, Elk Lumber Co., Medford, Ore.; Lester W. Foley, Foley Lumber Industries, Foley, Fla.; Abbott Fox, Abbott Fox Lumber Co., Iron Mountain, Mich.; A. J. Glassow, Brooks-Scanlon, Inc., Bend, Ore.; Roy Huffman, Potlatch Forests, Inc., Lewiston, Idaho; H. F. Jefferson, Nettleton Timber Co., Seattle, Wash.; G. E. Karlan, Eatonville Lumber Co., Tacoma, Wash.; Thomas J. McHugh, Atlantic Lumber Co., Boston, Mass.; Harry Morgan, mgr., Pulp Div., Weyerhaeuser Timber Co., Tacoma, Wash.; B. L. Nutting, Medford Corp., Medford, Ore.; E. C. Olson, E. C. Olson Lumber Co., Spokane, Wash.; Lee Robinson, Mobile River Sawmill Co., Mt. Vernon, Ala., and William Swindells, Williamette Valley Lbr. Co., Seattle, Wash.

It was emphasized by Chairman Frampton that the immediate goal of the committee is to raise $200,000, which will finance the first year's operations of the projected 10-year research program. In disclosing the actual details of the fund-raising campaign, he stated:

"Our objective is to raise these funds immediately so that the initial market survey and laminating research can be started during this calendar year. To achieve our goal we are counting on receiving fund contributions from every lumberman and every lumber company that our group can possibly contact."

Noting that it would be impossible for the fund-raising group to contact everyone, Mr. Frampton appealed to members of the industry to contact members of the group in their immediate area for literature and other information on the program. He said that support of this program offers a practical and effective means of improving wood's market position with resulting benefits accruing to every industry participant.

PREDICTS SWING TO WOOD AS RESULT OF GM FIRE

"THERE SHOULD BE an early return to the good old-fashioned slow-burning type of factory construction," said A. Fletcher Marsh, president of Marsh & Truman Lumber Co., Chicago, in commenting on the quick collapse of the General Motors transmission plant last month near Detroit.

"The utter destruction of this $35 million plant, fireproof so-called", said Mr. Marsh, "brings to light that it is far better to have slow-burning construction that can be controlled than the present quick-collapsible mixture of concrete and steel where flames rapidly cause trusses to buckle and pull down the concrete and steel windowed walls."

With many organizations in the country making long wood trusses, both glued and timber-connected, Mr. Marsh felt that the lumber industry could meet the increasing demand which is likely to be the outcome of the General Motors fire.

A flash fire is difficult to control at best, he claims, but with wood trusses there is nothing like the quick damage which causes steel trusses to buckle from the heat and pull the walls in with them as they quickly collapse.

Flameproofing of timbers, together with the great increase in sprinkler facilities in recent years, makes timber construction now the safest method of factory construction in the country, according to Mr. Marsh.

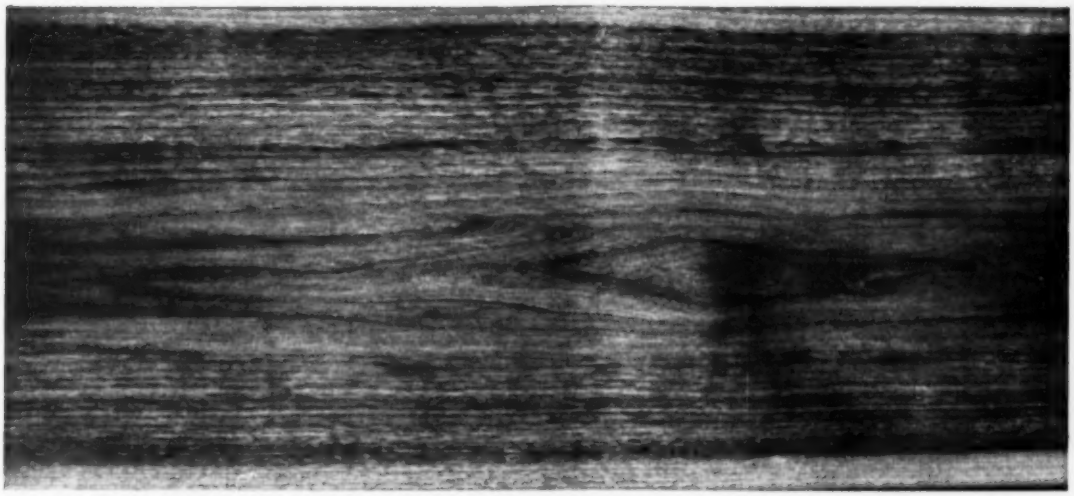
It appears that industrial plant engineers have been overlooking a bet, according to the Chicago lumberman, and he feels that the swing back to wood will not only give wider bays but more light and far greater protection in the case of either flash fires or those fed by the ordinary contents of industrial plants.

In addition to two firms in Chicago making long wood trusses, there are others along the Pacific Coast that are in shape to jump right in to meet this improving industrial factory construction demand, and it is figured that industrial engineers will quickly move away from the fast-collapsible type structures of the recent past.

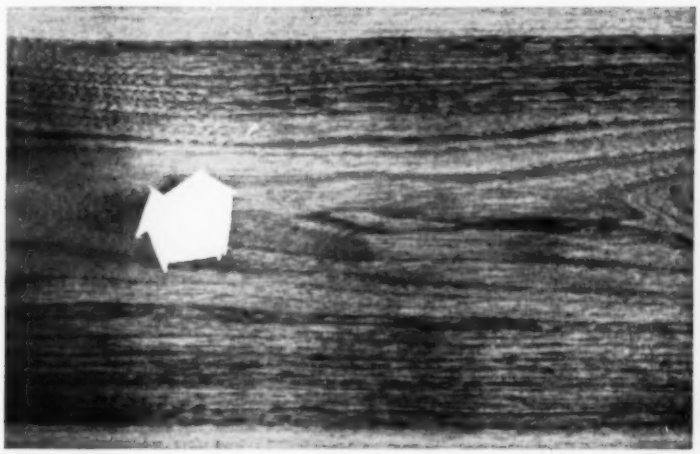
Mr. Marsh pointed out that the timber trusses of the present day are actually engineered so that stresses and strains can be carefully computed and there is no need, as in years past, to put over-sized timbers in buildings. Such has been the progress in recent years in engineering timbers for factory purposes.

When in Chicago Be Sure to Visit the New
HARDWOOD EXHIBIT
Museum of Science and Industry, 57th Street and South Shore Drive

WOOD TRUSSES would have been safer than quick-collapsible steel and concrete mixture that doomed General Motors plant. *(UP photo)*



"Which piece of veneer would you buy?"



You, of course, would buy the veneer without the hole because there would be no waste. Such holes are made by the cleaners who chop around hook holes to clean away any dirt that might nick the knives at the time the log is being sliced into veneer. We have worked out a method of handling logs that eliminates these holes. It takes a little more time in the saw mill, but we feel that the end result and customer satisfaction is well worth the extra effort.

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Before 1914 the word "circulation" had dozens of meanings. Circulation was so loosely defined that you or anyone else would have found clear facts almost unobtainable. The advertising and publishing industry, through establishment of A.B.C. 39 years ago, successfully met this critical need for dependable, standardized circulation figures.

The first step in the work of the Audit Bureau of Circulations was an accurate definition of just what "net paid circulation" meant. With this as a starting point, answers to important questions such as: *How much circulation? How much do people pay to get this publication? Where does the publication go? What do the readers do to earn their livings?* became possible on an industry-wide basis. Today, 65 skilled A.B.C. circulation auditors answer such questions accurately.

Methods for obtaining circulation, once limited only by publishers' ingenuity and consciences, are disclosed today. The fact that A.B.C. membership makes circulation-getting activity public has discouraged marginal practices of dubious value. Any buyer of space today can form a considered judgment as to the advertising value of any A.B.C. publication by analyzing the precise audited figures in the publication's audited circulation statement.

But, you may ask, "What's in this for *me* as a reader of WOOD & WOOD PRODUCTS? What do I get out of *your* A.B.C. membership?"

The answer is that you are a customer of ours. You paid us good money for your subscription. In order to merit your continued patronage, we know that we must produce a publication of high editorial quality. Thus our obligation to you is also an obligation to ourselves, one that must be fulfilled if we are to stay in business.

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HDMA Has New Address

The new address of the Hardwood Dimension Mfrs. Assn. is 218 Broadway National Bank Bldg., Nashville, Tenn. The telephone number is 6-6712.

HANCHETT MODEL DN knife grinder

NEW! *fully automatic — low priced*

KNIFE CAPACITY — *32" to 108"*

MODEL DN FEATURES:

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2. Eliminates all gears (Requires no lubrication).
3. Free from vibration and reversal shock.
4. 100% Anti-Friction Bearings.
5. Precision ground ways for accuracy.
6. Guarantees perfect machine alignment.
7. Force feed lubricated ways.

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FINEST KNIFE EDGES

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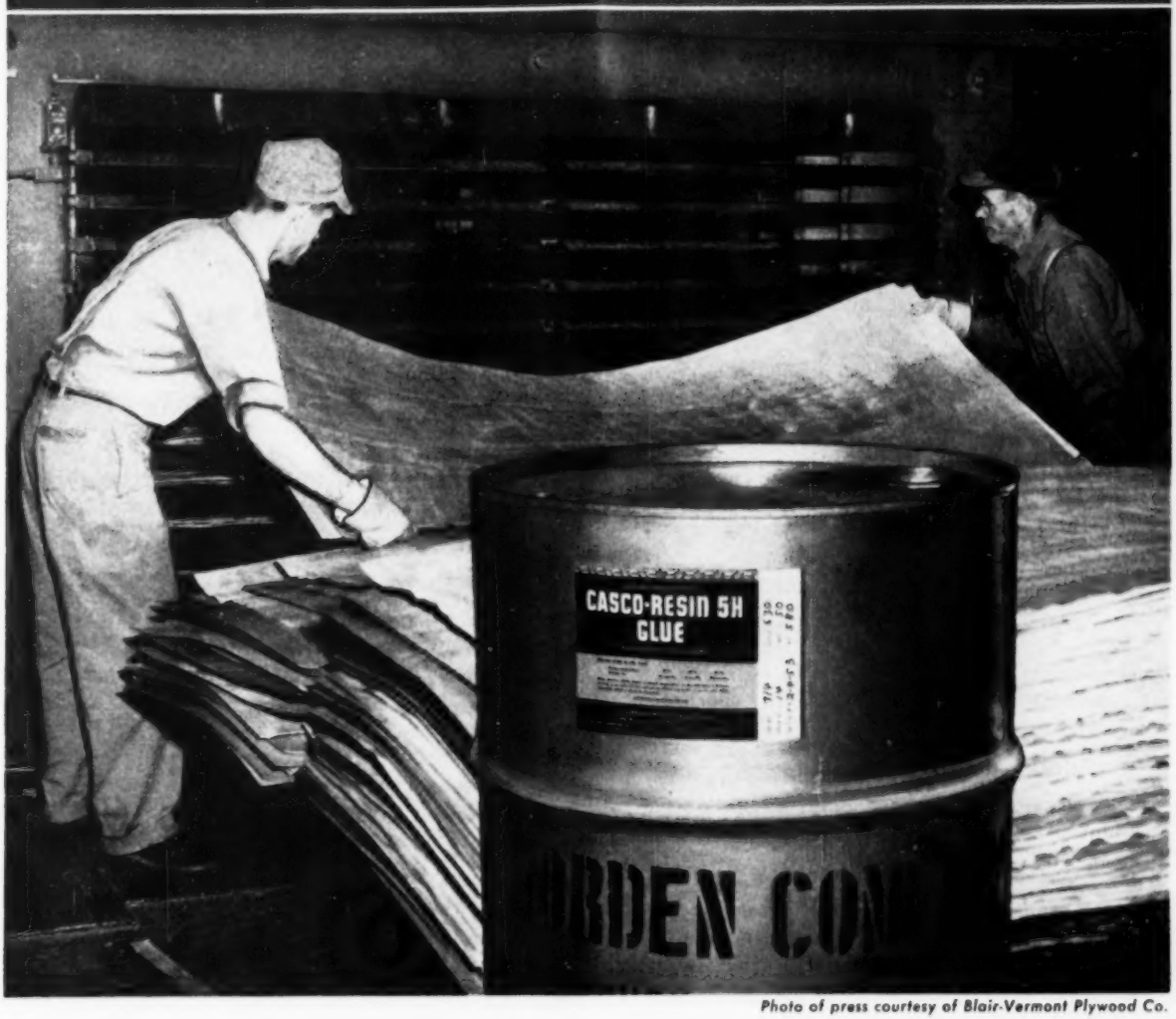

Photo of press courtesy of Blair-Vermont Plywood Co.

. . . produces more panels per shift!

CASCO-RESIN 5H cures *faster* without sacrifice of pot life or assembly time . . . knocks costly minutes off hot- or cold-press curing cycles. Many plywood and panel makers have switched to CASCO-RESIN 5H for this one reason alone. But that's only one of the advantages of this new Borden urea resin glue.

CASCO-RESIN 5H also ends summer glue-storage problems because it stores over six months at 80° F . . . over 3 1/2 months at 90°. It's a high solids resin that saves storage space in drums or tanks. It up-grades your products with better water-resistance, particularly when extended with wheat flour. It's versatile, can be used for every type of urea resin gluing — hot-press, cold-press, R/F heating or continuous hot-plate edge-gluing machines. Shortens clean-up, because it's highly water miscible, flushes quickly from equipment.

Borden service men are demonstrating these advantages every day. Why not let them prove it in *your* plant? Just write or call and we'll set up a date. Address: The Borden Company, Chemical Division, Dept. W-103 350 Madison Avenue, New York 17, N. Y. E.3.3

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THE BORDEN COMPANY

Chemical Division

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Your Atlantic Man knows hardwoods, from training, and from years of experience in serving manufacturers of many diverse products. His advice can be worth a great deal to you, in improving your product, increasing your sales, and in giving you peace of mind. It pays you to talk things over with your Atlantic Man. See him often.

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WOOD PUZZLERS

This department is designed to help find answers to your production and sales problems. Let us know what information you need. Experience has shown that other readers may be able to help you.

121-Rough Douglas Fir Plywood

We have available rough Douglas Fir Plywood, hot press construction, in 48 by 48 and 48 by 72 sizes, in thicknesses from 5/16 in. to 3/4 in. which can be supplied cut to size. Inquiries invited. (Wash.)

122–K. D. Laminated Beech Legs

One of our clients has on hand about 20,000 K. D. clear laminated beech legs or posts which represent an overstock due to change in product. They are 3¼ in. by 4½ in. by 25½ in., flat on three sides, with rounded corners, and oval shape on the fourth side. (Each leg would make two, 2¼ in. by 3¼ in.) Prices are quite low, and samples could be furnished on request. (N. J.)

123–Block Flooring From Waste

Our company is desirous of obtaining information for the manufacture of block flooring with the idea of utilizing shorts and other waste materials. Any information you can give us on this subject, particularly equipment used and methods, will be greatly appreciated. (Fla.)

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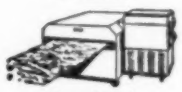
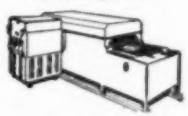
You can cut hours — even days — off production schedules with Mann-Russell Electronic equipment—generators, patchers, lumber and veneer edge-gluers. All units custom-designed to meet your particular needs and installed by factory-trained experts.

If your production calls for gluing up short lengths, edge-gluing hard or soft wood veneers, or other lamination — write today for specific data outlining your problem.

Mann-Russell RF Generator


Mann-Russell Veneer Edge-Gluer


Mann-Russell Lumber Edge-Gluer

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Tinfoil	Brakes	Polythene
Leather	Metal	Cellophane
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and many other materials.

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PATENT DIGEST

Circular Saw

A. P. Smith (to Barker Saw Company). U. S. 2,635,650, Apr. 21. Manually portable circular saw.

Lumber Handling

R. Z. Drake. U. S. 2,635,729, Apr. 21. Apparatus for handling, stacking and storing lumber.

Grinding Attachment

N. J. Rivard. U. S. 2,636,326, Apr. 28. Grinding attachment for straight edge wood tool blades.

Lumber Sorter

H. E. Bovay, Jr., C. A. Lawler, and L. H. Wheeler (to A. Temple, Jr. and H. E. Bovay, Jr.). U. S. 2,636,601, Apr. 28. Lumber conveyor having two normally closed switches, one normally open switch, an electrical circuit connecting the switches in series, and actuating means for each switch disposed near the conveyor to actuate same by all lumber on the conveyor whereby varying pieces of lumber are sorted.

Checkering

F. H. McDonald, J. J. Mackrell, K. P. Rado and J. R. Brand (to Remington Arms Co., Inc.). U. S. 2,638,946, May 19. Apparatus for cutting on a workpiece having a longitudinal axis, a plurality of patterns, each pattern having a plurality of border cuts separated by a predetermined number of checker cuts.

Carpenter's Plane

P. Lausch. U. S. 2,638,947, May 19. Carpenters' plane having a removable cutter blade.

Expanding Bit Reamer

G. L. White. U. S. 2,638,948, May 19. An internal reverse taper expanding bit reamer.

Wall Construction

A. S. Neves. U. S. 2,639,471, May 26. Building construction comprising a panel of upper, lower and intermediate horizontal parallel timbers and a network of diagonal stud members.

Dowel Pin Cutting

C. L. Johnson. U. S. 2,639,739, May 26. In a dowel making machine, a pair of bevelled cutters, driving means, a rotary work carrier, and an endless friction drive belt.

Match Splints

F. Schafer (to Bell Machine Co.). U. S. 2,639,740, May 26. In a match cutting machine splints, block holding means, a rotatable shaft, a knife carrier and spaced slitting knives.

Woodworking Machine

W. G. Taylor and C. W. Campbell. U. S. 2,639,741, May 26. Self-propelled woodworking and finishing machine comprising tracks secured to opposite edges of the work, pairs of rollers on the tracks, a carriage frame and means for rotating and adjusting a horizontal cutter bar.

Heel Shaper

G. R. Constantine and A. F. Ball (to Service Wood Heel Co.). U. S. 2,639,742, May 26. A wedge heel shaping machine.

Sawdust Drying

J. R. Hecht. U. S. 2,639,911, May 26. Sawdust drying apparatus comprising a furnace, a smoke stack, a drying chamber, a pipe for hot gases, a spark arrester, a carbon dioxide bottle, a pipe for vent gases, and means for conveying sawdust through the chamber.

Plywood

R. de Mello. U. S. 2,640,517, June 2. Apparatus for the manufacture of corrugated plywood comprising undulated corrugating platens and heating means; said platens interfitting each other to shape a plurality of glue-coated wood ply sheets into corrugated form, and means for adjusting pressures within the assembly.

Knockdown Furniture

N. M. Kreizelman. U. S. 2,640,527, June 2. Knockdown bentwood furniture.

Railway Car Flooring

B. Goldberg (to Pressed Steel Car Co., Inc.) U. S. 2,642,817, June 23. Vehicle comprising a housing of laminated cellular panel forming the floor, said floor being formed over transversely extending supports, filler units joining the ends thereof and a pair of bolsters extending transversely of the housing and fitted to the panel at the bottom, said bolsters being formed of plywood laminations.

Gluing Apparatus

V. J. Winkel (to Laminated Lumber Products, Inc.). U. S. 2,642,835, June 23. Machine for making larger boards from small boards, an assembly table including a moving supporting belt and parallel guides to provide channels in which the smaller boards are placed end-to-end in rows separated by the guides and a plurality of adhesive applying means adjacent the ends of the guides.

Pole Gaining Machine

R. J. Efurd, Jr. and E. A. Efurd. U. S. 2,642,903, June 23. In a pole machine a framework, a pair of spaced rails extending from one end of the framework and parallel to a second set of rails, a wheeled buggy mounted on the first rails and adapted to support the pole, means for rotating the pole, and cutter means for shaping the pole.

Log Debarker

J. H. Pearce. U. S. 2,642,904, June 23. In a log debarker and chipper, a cutting mechanism comprising a bank of flexible endless conveyors following a path lying in an upright plane, cutters secured to the conveyors, and means for driving the conveyors.

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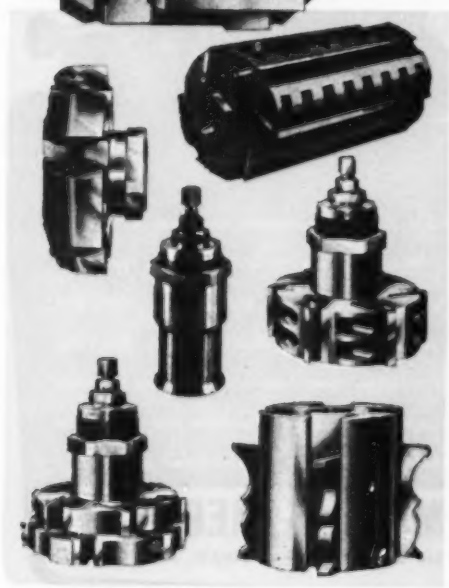
Immediate shipment from our large stocks of heads!



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CURRENT LUMBER PRICES

These prices are made available by George Land, publisher of the weekly *Hardwood Market Report*, in his copyrighted issue of September 5, 1953. For the entire list, contact Mr. Land, Box 5716, Memphis 4, Tenn.

Note: Each price change from preceding issue is marked by an asterisk (*).

SOUTHERN HARDWOODS

F.O.B. mills—Texas and Louisana area. Estimate of present mill point average market price, to consuming trade on band-sawn Southern Hardwoods in carload quantities, random widths and lengths, rough air dried and graded in accordance with NHLA rules on inspection. Prices in dollars per M ft. On straight cars of upper bracket grades premiums are frequently being paid.

	FAS	No. 1C	No. 2C
ASH—FIRM TEXTURE			
4/4-in.	160	120	63
6/4-in.	170	125	67
8/4-in.	190	150	80
BASSWOOD			
4/4-in.	160	125	83
6/4-in.	170	135	87
8/4-in.	180	145	90
BEECH			
4/4-in.	125	100	55
6/4-in.	140	110	60
8/4-in.	167	127	72
CHERRY			
4/4-in.	220	150	90
6/4-in	240	170	95
8/4-in.	250	180	100
RED GUM—PLAIN			
4/4-in.	205	150	75
6/4-in.	230	170	75
RED GUM—QUARTERED			
4/4-in.	220	165	75
6/4-in.	250	190	90
8/4-in.	260	200	95
SAP GUM—PLAIN			
4/4-in.	127	107*	53
6/4-in.	138	118	55
8/4-in.	155	130	
HACKBERRY			
4/4-in.	117	97	67
6/4-in.	132	112	75
8/4-in.	135	112	75
SOFT MAPLE—WHAD			
4/4-in.	130	110	67
6/4-in.	145	120	77
8/4-in.	155	125	80
SOFT MAPLE—WHND			
4/4-in.	115	90	60
6/4-in.	130	105	75
8/4-in.	135	110	80
RED OAK—PLAIN			
4/4-in.	175	100	72
6/4-in.	190	120	
8/4-in.	200	140	
WHITE OAK—PLAIN			
4/4-in.	185	112	72
6/4-in.	200	140	
8/4-in.	205	148	
PECAN			
4/4-in.	112	92	50
6/4-in.	130	110	60
8/4-in.	155	130	65

	FAS	S&S	No. 1C
POPLAR—PLAIN			
4/4-in.	170	160	130
6/4-in.	185	175	140
8/4-in.	205	195	150

	FAS	No. 1C	No. 2C
SYCAMORE—PLAIN			
4/4-in.	115	95	50
6/4-in.	127	107	62
TUPELO—PLAIN			
TUF TEXTURE—DEEP SWAMP			
4/4-in.	127	107*	53
6/4-in.	138	118	55
8/4-in.	155	130	
WILLOW			
4/4-in.	135	115	62
6/4-in.	142	122	67
8/4-in.	150	125	70

APPALACHIAN HARDWOODS

F.O.B. mills—Johnson City, Tennessee area. Estimate of present mill point average market prices on sales to consuming trade on band-sawn Appalachian Hardwoods in carload quantities, random widths and lengths, rough air dried and graded in accordance with NHLA rules on inspection. Prices in dollars per M ft. On straight cars of upper bracket grades premiums are frequently being paid.

POWERMATIC

MODEL 15 CHAIN SAW MORTISER

Exclusive new sliding head action eliminates friction.

Extremely heavy cast iron construction prevents vibration.

A universal Chain Mortiser with balanced sliding head that operates with a minimum of effort. The completely universal adjustable table and the smooth operating sliding head makes an ideal machine for production shops as well as small cabinet shops.

Powermatic Machine Co.
McMinnville, Tenn.

Please send catalog describing the Powermatic Model 15 Chain Saw Mortiser.

Company _____

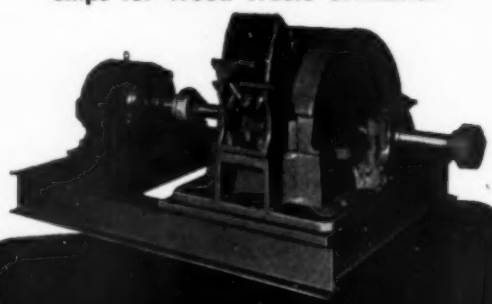
Address _____

City & State _____

Name _____ Position _____

M&M hogging equipment

Chips for Wood Waste Utilization



Let M & M Disposal Equipment turn your waste into profits. These machines are built in many types and sizes for slabs, edgings, trim, blocks, veneer, bark, and other combustible waste. Don't overlook the extra dollars that can come from utilizing every available bit of waste. Send us your problem and we'll show you how M & M Disposal Equipment can solve it.

MITTS & MERRILL

1018 South Water • SAGINAW, MICHIGAN

TOUGH ASH

	FAS	FIF	No. 1C	No. 2C
4/4-in.	170	160	115	68
6/4-in.	190	180	130	75
8/4-in.	200	190	150	85

BASSWOOD

				No. 2A
4/4-in.	180	170	130	88
6/4-in.	190	180	137	90
8/4-in.	195	185	147	96

BEECH

				No. 2C
4/4-in.	145	135	110	65
6/4-in.	160	150	120	75
8/4-in.	170	160	130	80

BIRCH

4/4-in.	265	255	150	80
6/4-in.	275	265	160	85
8/4-in.	280	270	165	90

BUCKEYE

4/4-in.	135	125	100	65
6/4-in.	165	155	120	73
8/4-in.	170	160	125	78

CHERRY

4/4-in.	230	220	150	90
6/4-in.	250	240	170	95
8/4-in.	260	250	180	100

CHESTNUT

	FAS	No. 1C	FAS WHND	1C & B WHND
4/4-in.	170	120	137	127
6/4-in.	175	125	142	132
8/4-in.	180	130	152	142

HICKORY

	FAS	FIF	No. 1C	No. 2C
4/4-in.	125	115	78	53
6/4-in.	145	135	86	58
8/4-in.	170	160	90	60

HARD MAPLE

4/4-in.	205	195	135	80
6/4-in.	220	210	155	84
8/4-in.	225	215	160	90

SOFT MAPLE

4/4-in.	165	155	115	67
6/4-in.	175	165	135	69
8/4-in.	180	170	140	75

RED OAK—PLAIN

4/4-in.	185	175	120
6/4-in.	200	190	140
8/4-in.	215	205	145

WHITE OAK—PLAIN

4/4-in.	200	190	125
6/4-in.	220	210	145
8/4-in.	225	215	155

WHITE OAK—WHND

	FAS	FIF	C & B	No. 1C
4/4-in.	125	115	95	90
6/4-in.	150	140	120	115
8/4-in.	160	150	130	120

YELLOW POPLAR

	FAS	FIF	No. 1C	No. 2A
4/4-in.	210	200	138	88
6/4-in.	220	210	150	92
8/4-in.	225	215	155	95

POPLAR SQUARES

	FAS	No. 1C & SD
4x4-in.	245	175
6x6-in.	280	190
8x8-in.	340	240

WALNUT—STEAM TREATED

	FAS 6"&up	FIF 6"&up	No. 1C	No. 2C
4/4-in.	370	325	180	75
6/4-in.	395	350	215	90
8/4-in.	420	375	235	95

Walnut list reflects average fob mill, all areas. Basing point not generally observed.

NORTHERN HARDWOODS

Estimate of present f.o.b. Wausau, Wisconsin mill point average market prices to consuming trade on band-sawn Northern Hardwoods in carload quantities, random widths and lengths, rough air dried and graded in accordance with NHLA rules on inspection. Prices in dollars per M ft. On straight cars of upper bracket grades premiums are frequently being paid.

BROWN ASH

	FAS	No. 1C	No. 2C
4/4-in.	155	107	75
6/4-in.	165	123	85
8/4-in.	170	133	90

BASSWOOD

4/4-in.	191	131	80
6/4-in.	201	141	90
8/4-in.	206	191	98

BEECH

4/4-in.	145	100	68
6/4-in.	160	115	78
8/4-in.	165	120	80

BIRCH

4/4-in.	296	151	81
6/4-in.	306	166	91
8/4-in.	311	181	100

ROCK ELM

4/4-in.	150	130	66
6/4-in.	160	140	76
8/4-in.	165	150	81

SOFT ELM

4/4-in.	140	120	72
6/4-in.	150	130	82
8/4-in.	155	138	87

HARD MAPLE

4/4-in.	196	131	78
6/4-in.	206	141	81
8/4-in.	216	151	83

SOFT MAPLE

4/4-in.	160	125	75
6/4-in.	175	135	85
8/4-in.	190	145	93

RED OAK

4/4-in.	186	126	78
6/4-in.	196	146	83
8/4-in.	206	156	85

Sugar Pine and Ponderosa Pine

from our own Large Timber Resources

Mixed Cars to the Trade Our Specialty

Mouldings—Kiln Dried Top Quality
Interior Trim—Jambs—Frames
Incense Cedar Venetian Blind Slats
Cut Stock—Glued-up Panels—Box Shook

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SMITH
Lumber Company

ANDERSON, CALIFORNIA

A Dependable Source of Supply

MILLS at ANDERSON & CASTELLA
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SUGAR PINE • PONDEROSA PINE • DOUGLAS FIR • WHITE FIR • INCENSE CEDAR

Hold Logging Show In Missouri

The first Forestry, Logging, Milling and Equipment Show held in Missouri will be staged October 1-2 in the Maramec Springs area near St. James, Mo.

The show is designed primarily to demonstrate to small woodland owners and small sawmill operators the various types of light and medium equipment which will increase efficiency and take much of the hand labor out of timber harvest and utilization.

HIGHLY MOBILE SAWMILLS, such as this example, will be operated at Missouri Logging Show, October 1-2. These types of sawmills can be set up and operating in a matter of minutes

LOADING CRANE for jeep or pick-up truck enabling small operator to load logs easily, safely, will be demonstrated at Missouri Logging Show

The exhibit is sponsored by the Missouri Agricultural Extension Service, in cooperation with the Forestry Department, Missouri College of Agriculture; the United States Forest Service; Missouri Conservation Commission; Division of Resources and Development, and various wood-using industries in the State.

On display will be equipment for sawing, handling, trucking, loading and debarking of logs, as well as small

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THERE'S NONE SO RARE AS CAN COMPARE.....

. . . with the precision and dependability of GAMBLE BROTHERS' fine wood parts. Whether you call for your wood parts fully or semi-machined, solid or laminated, you can be *sure* they will be made to your *exact* specifications, and that they will go together on your assembly line quickly, easily, and accurately. What's more, all GAMBLE BROTHERS' parts are thoroughly kiln-dried to minimize shrinkage and warping, and assure *permanent fit.*

When precision, dependability, speed and economy are important factors . . . your answer is GAMBLE BROTHERS . . . proved by more than fifty years' experience in wood engineering.

WRITE OR PHONE TODAY!

Engineered Wood Parts in Southern and Appalachian Hardwoods, Walnut, or Mahogany.

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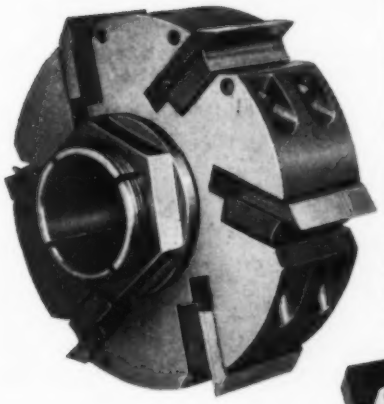
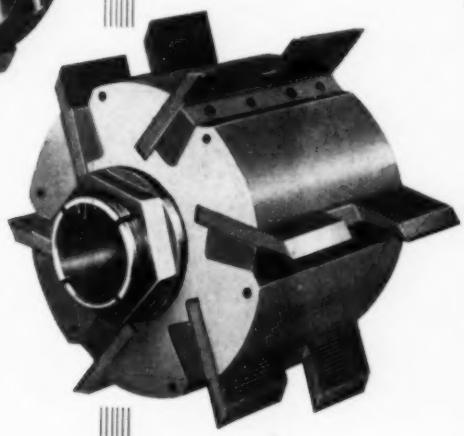


boost production

on your moulder equipment . . .

use

REDCO

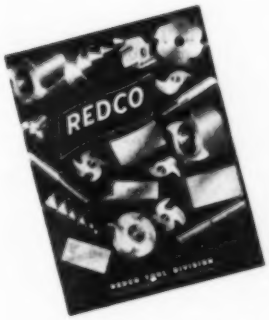


Safety Serrated

MOULDER HEADS

REDCO's *Planned Tooling Program* which includes the coordinated use of Redco Carbide Tipped Tools and the simplified Redco Precision Grinder, is establishing remarkable production records. And Safety Serrated Moulder Heads play an important part in the success of this Redco Program. The wedge-like construction of the chip breaker and close tolerances held on both the knife and the head serrations, prevent knives from loosening and flying from the heads. Dynetric balancing of heads guarantees smoother running, high quality cutting. Redco Safety Serrated Moulder Heads can be equipped with either high speed steel or cemented carbide tipped knives.

These Redco Moulder Heads are made in three standard widths; 2", 4" and 6", all 6" diameter with 6 knife positions. Get the facts . . . and you'll get these Heads as part of your program to boost production with Redco planned tooling.



Write for your free copy of this new Redco Bulletin. It's a fact-full bulletin giving complete information on Redco Tools, Redco Grinder and the entire Redco Program.

Serrated Moulder Heads, like all Redco Tools, quickly and easily sharpened in your own shop on this simplified Redco Tool Grinder under Redco's Planned Tooling for Production Program.

REDCO **TOOL DIVISION**

RED LION CABINET CO., RED LION 1, PA.

sawmills and other equipment. Trees will be felled, hauled, loaded onto trucks, put through sawmills and undergo the same operations they would in actual felling and sawmilling operations.

It is expected that as many as 100 firms will exhibit equipment and an audience up to 5,000 is anticipated. Sawing contests and log-chopping contests are planned as part of the program.

NHHMA Hears World Strife Talk

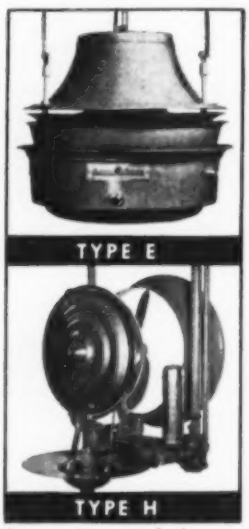
Chief speaker at the recent meeting of the Northern Hemlock and Hardwood Mfgs. Assn., held September 9-10 in Land O'Lakes, Wis., was Dr. Wm. M. McGovern. Dr. McGovern, a professor at Northwestern University and a former member of General MacArthur's staff in Tokyo, spoke on the topic, "The World We Face."

Featured at the evening dinner were the four Schmitt Brothers, a quartette well known on TV.

Business sessions held on Wednesday, September 9 were attended by Leo Bodine, executive vice-president, National Lumber Mfgs. Assn. Bodine discussed developments in Congress.

Social activities included card games for the ladies and a golf game for the men.

Humidity Control Saves Dollars, Hours, And Headaches in Woodworking Plants!



★ **Here's positive humidity control for one room or your entire plant! The Bahnson Humidifier provides it . . . automatically, efficiently . . . for as little as $10.00 per year per unit . . . with each unit capable of handling up to 30,000 cubic feet.**

Bahnson unit humidifiers are self-contained, require no compressed air, steam, pumps, or floor space. Easy to install—uncrate and suspend from ceiling, then make electrical and water connections. Evaporation range up to 12 gals. per hour per unit, using city or well water at ordinary pressures. Single or multiple installations with fully automatic control. Satisfaction guaranteed by America's largest maker of industrial humidification equipment—used by America's outstanding woodworking plants.

HUMIDITY CONTROL IN THE WOOD WORKING INDUSTRY

Bahnson

FREE! Get the complete story on how humidity control can save Dollars, Hours and Headaches in your plant.

Send today for your free copy of this fact-filled booklet. Simply clip coupon to your letterhead and mail immediately.

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POSITION_____

Bahnson Company

ENGINEERS AND MANUFACTURERS

WINSTON-SALEM, N. C.

Green to Veneer Group; White Takes Over at AWMA

Burdett Green

BURDETT GREEN has been named executive vice-president of The Veneer Assn., it was announced recently. Green, who has been secretary-manager of the American Walnut Mfrs. Assn. for 25 years.

Charles E. Close, who has been both executive vice-president of The Veneer Assn. and secretary-treasurer of the Hardwood-Plywood Institute, will continue as secretary-treasurer of the HPI, assisted by R. D. Behm, who has been appointed director of trade promotion for HPI.

The management of the Joint Forestry Program of The Veneer Assn. and AWMA has been transferred with Green to the Veneer Assn.

C. H. White

C. H. WHITE has been named secretary-manager of the American Walnut Mfrs. Assn. and succeeds Burdett Green, appointed executive vice-president of The Veneer Assn., according to R. K. Stem, president of the Walnut group.

Mr. White has served as assistant-secretary since March, 1947 and in that capacity headed the organization's trade extension program.

Prior to his work with the Association, Mr. White was with Gamble Brothers, Louisville, Ky.

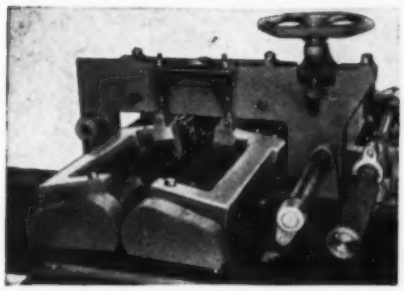
Yale to Be Host to FPRS Group

The Northeast Section, Forest Products Research Society will hold its fall meeting November 5-6 at Yale University, New Haven, Conn. Technical sessions on the program will cover Safety, Industry Training Problems, Laminated Structures and Techniques Related to Laminating and Timber Testing.

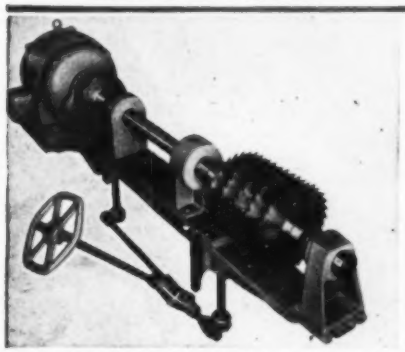
Discussion groups will meet the afternoon of November 6 to cover such subjects as Finishing, Gluing, Machining, Sawmilling, Kiln Drying, Material Handling, and Plastics. A

Mereen-Johnson HEAVY-DUTY GANG RIP SAW

. . . even rips Glue Joints



Double spur roll short stock attachment, showing hand-wheel for unit vertical adjustment.

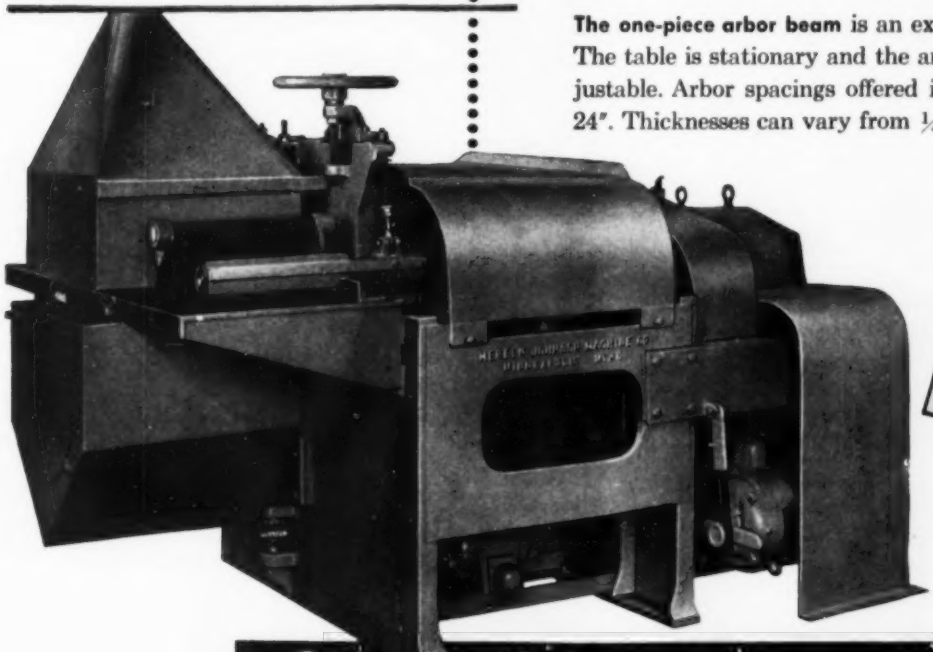


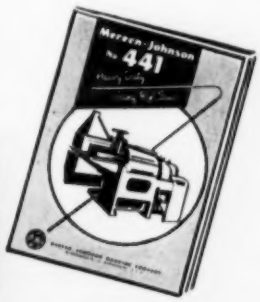
Heart of the No. 441 is the exclusive beam mounting of motor, arbor and bearings as a one-piece, rigid unit.

Power—Speed—Accuracy best describe the Mereen-Johnson No. 441 Gang Rip Saw. That it's in a heavy duty class by itself can best be demonstrated by the fact that *these machines are being operated with 125 HP on the arbor, making 22 cuts in 8-quarter gum at 100 F.P.M.*

A combination of features make the No. 441 adaptable to a wide variety of gang ripping operations. For *wire-bound boxes* it will rip very short cleats at maximum production speeds while maintaining utmost accuracy . . . For *furniture core stock* and core banding strips, the No. 441 is used as a straight line gang rip saw . . . For *hardwood flooring*, the machine runs as a rough ripper ahead of the matcher, or it can be used as a smooth straight line ripper producing strip flooring . . . *Sheet materials* as insulation board, hardboard and plastic laminates are rapidly turned out when No. 441 machines with 19″ or 24″ arbors are used.

The one-piece arbor beam is an exclusive M-J feature. The table is stationary and the arbor is vertically adjustable. Arbor spacings offered include 12″, 19″ and 24″. Thicknesses can vary from ¼″ to 4″.





Send for the No. 441 Bulletin

8 pages of Fully illustrated, Rip Saw Data.

Mereen-Johnson MACHINE COMPANY

4401 LYNDALE AVENUE NORTH · MINNEAPOLIS 12, MINNESOTA

short business meeting is scheduled before lunch on November 6.

Dr. A. W. Griswold, Yale University, will be the guest speaker at the official luncheon on November 5. Arrangements have been made for a tour of the Winchester Arms plant of Olin Industries, where all phases of new and converted gun stock production will be seen.

Further details from section secretary, William J. Delmhorst, Delmhorst Instrument Co., Boonton, N. J.

Duluth Scene of FPRS Meeting

Meeting at Duluth, Minn., October 5-6, the Upper Mississippi Valley Section, Forest Products Research Society, has scheduled a program that will feature the problems and benefits involved in using portable debarking equipment.

Fred J. Voss, vice-president and chief engineer, Duluth, Missabe and Iron Range Railway, will be the principal luncheon speaker Oct. 6.

Plant tours in conjunction with the October meeting have tentatively been arranged at Wood Conversion Co., Cloquet, Minn., Superior Wood Products Co., Duluth, and Halverson Trees, Inc.

Program chairman for the meeting is R. J. Wood, Diamond Match Co., Cloquet. Further information from William J. Kluender, Secretary, Upper Mississippi Valley Section, FPRS, care of Chicago and Northwestern Ry. System, 275 E. Fourth St., St. Paul,

Safety Congress To Meet

The 41st National Safety Congress and Exposition will meet in Chicago October 19-23, with the Wood Products Section meeting on the first three days, October 19-21.

The Wood Products Section will open Monday afternoon, October 19 in the Pine Room of the Congress Hotel. Election of officers, committee reports and a movie will make up the bulk of the first meeting. That evening, a Wood Products Section Smoker will be held at 7:30.

Tuesday afternoon, October 20, at two o'clock, round table discussions will be held on four topics: sawmilling and lumbering, furniture and woodworking plants, logging, and cooperage. Each will be held in separate rooms at the Conrad Hilton Hotel.

Three talks of a nature applicable to all phases of the wood industry will be given in the concluding meeting, Wednesday afternoon, October 21. Each talk will be followed by a discussion period.

New Label For Plywood

A labeling system designed to permit identification of genuine hardwood plywood produced by American manufacturers is now in operation, the Hardwood Plywood Institute has announced. Under this plan, panel marketed by participating mills will bear stamps attesting to their quality and origin.

The trade mark is a green-black circle on which appear the lower-case letters "hpi." Rimming the circumference are the words, "Certified American Quality—Hardwood Plywood Institute."

Where practical, the trade mark will be carried on the back of a panel, either as a rubber stamp or a pasted-on label. When it is undesirable to mark either face, a narrow stamp will be placed on a panel end.

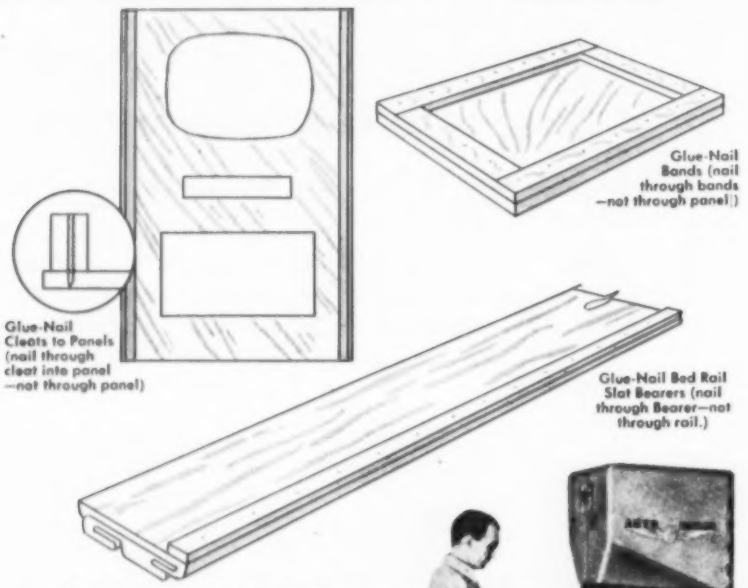
Plywood Group Holds Contest

Fir plywood manufacturers have posted $85,000 in prizes, including a trip around the world for two, in a nation-wide fall sales contest to boost immediate sales of plywood by more than 20% in a 60-day period.

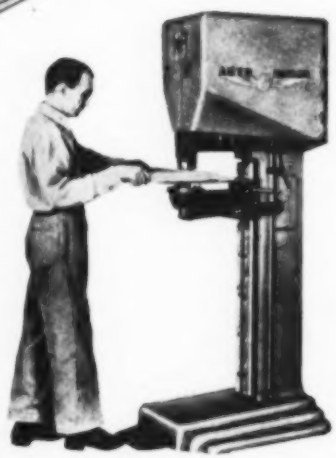
The contest is billed as a "World

WORK WHILE THE GLUE SETS

ELIMINATE SLOW, COSTLY CLAMPING *WITH* AUTO-NAILER*


Glue-Nail Bands (nail through bands —not through panel.)
Glue-Nail Cleats to Panels (nail through cleat into panel —not through panel)
Glue-Nail Bed Rail Slat Bearers (nail through Bearer—not through rail.)

A tight joint and positive glue bond are assured by using Auto-Nailer because the work is squeezed under pressure of 1,000 pounds. No slow, costly clamping. And since the auto nails sustain this pressure, the stock can be handled and worked while glue is setting.



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GREENLEE NO. 110 PLANERS IN OPERATION AT WHITE FURNITURE COMPANY, MEBANE, N. C.

SMOOTH IN OPERATION FOR SUPER-SMOOTH RESULTS

. . . Greenlee No. 110 Six-Roll Single Planer

The minute you run a piece of stock through a GREENLEE No. 110, you'll see what we mean when we talk about "smoothness". Finely finished panels can be planed so smoothly that they require little or no sanding.

Yet the No. 110 is a production machine for all types of planing. Feed speeds for rough cuts as well as for finely finished work are available. The entire operation is performed with such ease and speed . . . the finished work comes out with such fine finish and accuracy . . . you'll be able to picture immediately the extra production the GREENLEE No. 110 Six-Roll Single Planer can bring to your plant.

Friction, wear, and power consumption are reduced to an absolute minimum by means of ball and roller bearings, and oil-tight housings for the gears, which keep out dust and dirt. Bearings are lubricated by high-pressure grease gun, and the enclosed gears run in oil and lubricate themselves.

In all, the GREENLEE No. 110 Planer brings to all kinds of work . . . whether box boards or finely finished panels . . . unusual production speed, ease of operation, and accurate, smooth results. Write today for details. Greenlee Bros. & Co., 1900 Twentieth Ave., Rockford, Illinois.

MACHINERY & TOOLS

GREENLEE

GREENLEE WOODWORKING MACHINERY: MORTISERS • BORERS • SAWS • TENONERS • PLANERS • SHAPERS • MORTISING and BORING TOOLS

of Prizes" and is open to all warehouse salesmen who sell fir plywood to retail lumber dealers, according to the Douglas Fir Plywood Assn., Tacoma, Wash.

Unlike many sales competitions, most of the estimated 2,000 salesmen who will enter can win a prize. The national winner and his wife will be given a $5,000 'round-the-world tour by Pan American Clipper. There are nine other national prizes ranging from $1,500 to $150.

In addition, the industry is offering $27,000 in regional prizes with awards ranging from $1,000 to $50 for 25 winners in each of six regions.

Total fir plywood sales this year are 20% ahead of last year, and the manufacturers have tripled the scope of plywood promotion in the second half of 1953 in an effort to maintain this record-breaking volume.

Enterprise Buys Crescent Line

The Enterprise Co. Columbiana, Ohio, has purchased the Crescent 24-in. planer line and the Crescent 36-in. band saw line from the Crescent Machine Division of Rockwell Mfg. Co. Enterprise will be in position to furnish these machines beginning October 1,1953 under the Crescent trade name.

"This machine immediately became one of the most important pieces of equipment in the factory and we could not possibly get along without it."
"The maintenance of the ... is negligible."
"... unable to operate our plant without it."
"... the best machine that could have been purchased for our operation"
*EVERY USER IS ENTHUSIASTIC!
* We've heard from every user of the Bell "300" Electronic Gluer. Every single user is enthusiastic about the performance of this machine!
Excerpts are shown from only a portion of the replies. Copies of complete letters are available upon request.
No other high frequency edge bonding machine can match this performance record!
THE BELL MACHINE CO., 78 Jackson Dr., Oshkosh, Wis.
BELL WOODWORKING MACHINERY
Careful check on our production costs and find that ... men are able to produce the equivalent of what ... erly took eight men to do."
"... is highly satisfactory and we have no hesitation in recommending the machine to other customers ..."
"... 100% satisfied with our ... wonderful service that goes al...

New President of U.S. Plywood

S. W. "Tony" Antoville, who entered its employ as a vacation-time office boy 32 years ago, was elected last month president of United States Plywood Corp.

The board of directors selected him as successor in the presidency to Lawrence Ottinger, founder and only other president of the company since he organized it in 1919. Mr. Ottinger remains as chairman of the board of directors and chief executive officer.

Tony Antoville had been vice-president and director of the company since 1937, and a member of the executive committee since its organization five years ago.

Company To Do Army Research

The Office of Quartermaster-General announced recently that a research and development contract has been awarded to National Starch Products, 270 Madison Ave., New York 16, for the development of an improved adhesive for packaging of Quartermaster items for overseas shipment. A somewhat similar contract was awarded the company recently by the Navy.

No More "Blackboards"?

The black "blackboard" of school day memories may be on the way out, according to a report from the United States Plywood Corp., 55 W. 44th St., New York 36.

The company has developed a green "blackboard" called Chalkboard. This new product is a laminate, with a facing of three-coat porcelain fired on 18-guage enameling steel which is bonded to ¼ in. Weldwood plywood. This in turn is bonded to an aluminum backing.

Advantages are that the green color is easier on the eyes, and that the surface of the board will be almost impossible to scratch. Also the Chalkboard attracts permanent magnets, permitting the posting of papers and notices by the use of magnetized clips.

Joa Opens Office in N. C.

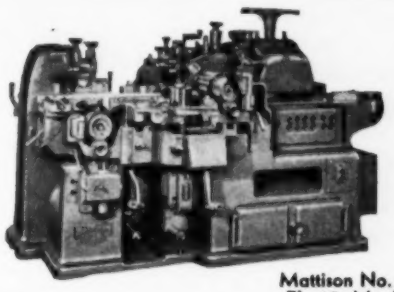
Curt G. Joa Inc. announced recently the opening of an office in Lenoir, N. C. Heading the new branch will be James Coleman.

He will act as direct factory representative for the territory of North

FOR YOUR MACHINE ROOM YOU WANT THE *Latest*

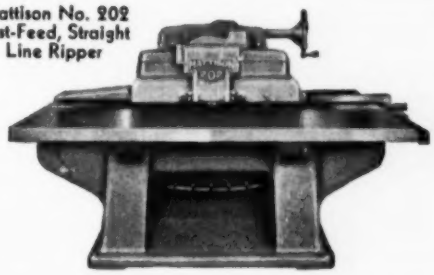
To be out in front you will want the newest and latest equipment for your machine room. The best will be none too good. We will be glad to show you what Modern Mattison Machines can mean to you in terms of greater volume, reduced costs, and better and more accurate work. As the first step write for new free circulars.

Write Today for Free Circulars



Mattison No. 276
Electric Moulder

Mattison No. 202
Fast-Feed, Straight
Line Ripper



Mattison No. 57F
Automatic Shaping Lathe

Mattison No. 303
Automatic stroke
sander

Mattison Machine Works, Rockford, Illinois
Please sent for Circulars on: Moulders.....Rip Saw.....
Turning Lathes.....Sanders—Power Stroke.....Hand
Lever.....Hand Block.....Variety.....Edge.....

Name.....Title.....
Firm.....
Street.....
City.....State.....

MATTISON MACHINE WORKS
ROCKFORD · ILLINOIS

and South Carolina, Alabama, Tennessee and Georgia.

Personnel Changes

ROBERT L. WESTBEE has been elected a vice-president of Minnesota Mining & Mfg. Co., the board of directors announced recently. Westbee will head 3M's newly-created electrical products division.

JED DAVISON has been appointed sales manager of Morgan Mfg. Co., Black Mountain, N. C., manufacturers of woodworking dimension stock.

Davison was for five years quality control engineer and plant representative at the Morgan plant. He was associated with the Davison Wood Products Company of Waterbury, Vt., and was eastern representative for Munising Woodworking Products, Inc.

RICHARD C. CRANCH, 33, former research and development engineer with the Bureau of Ships, U. S .Navy, has joined the laboratory staff of Timber Engineering Co., according to Carl A. Rishell, director of research.

Cranch is a native of Cleveland, O., and a graduate of the University of Maine. After four years military service, he attended Yale University where he received his master's degree in forestry.

Prior to joining the Teco staff as wood technologist, Cranch was northeastern sales manager for Wood Treating Chemicals Co., St. Louis, Mo.

R. N. Smith

ROBERT N. SMITH has been appointed as assistant to Executive Secretary Frank J. Rovsek of the Forest Products Research Society, Madison, Wis., it was announced recently.

In his work with FPRS, Smith will initially concentrate on membership activities.

CHARLES E. ST. THOMAS has been named manager-advertising and sales promotion at the Carboloy Department of General Electric Co., according to an announcement by J. E. Weldy, manager-marketing.

St. Thomas had been news bureau manager since August, 1952.

DAVID B. TYLER, formerly in charge of advertising for Norton Behr-Manning Overseas, has been named to handle advertising of the Norton Company's precision grinding and lapping machines, refractory and boron carbide products.

At the same time, Clifford S. Duxbury, Jr., was named to direct Norton's export advertising.

R. T. MILLER has been appointed manager of sales of hardboard products for Weyerhaeuser Sales Co., St. Paul, Minn., R. S. Douglas, vice-president and general manager, announced recently.

Miller comes to Weyerhaeuser from the Simpson Logging Co. of Seattle

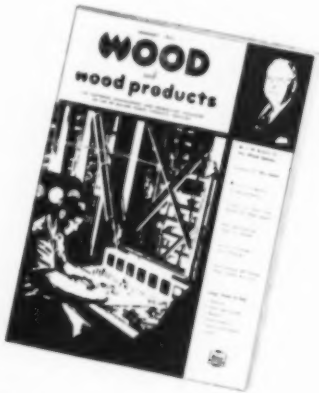
THEODORE H. BOOTH, general manager of the Bonded Products and Grain Division of The Carborundum Company, was elected vice-president recently by the Board of Directors, according to an announcement by Clinton F. Robinson, president, The Carborundum Company, Niagara Falls, N. Y.

JAMES F. FOWLER, former Douglas Fir Plywood Assn. representative in Boston, Mass., has been named managing director of the Fir Door Institute, Arthur C. Peterson, president announced.

Fowler, 33, a native of Tacoma, will be located at the Institute's headquarters in that city.

If you're a reader, but not a subscriber— you can't afford to miss a single copy of

Wood & Wood Products



Every issue is packed with ideas that can make money for you

Every month, WOOD & WOOD PRODUCTS gives you practical "know how" information that can help you get more economical production with greater efficiency.

For example: How layout changes can be made to pay off in your plant. Production shortcuts. Labor-saving ideas. Profitable waste utilization. New information on seasoning, finishing, packaging, gluing. Current markets—trends—news. Cost control. How to combat the inroads of "substitutes" on your market. How to meet changes or emergencies that affect your business. Ideas on operation, care and maintenance of machines and equipment.

P. S.—If you are a subscriber, and your renewal is due, be sure to send in your order now.

Be sure you have your own copy every month!

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Please enter my subscription to WOOD & WOOD PRODUCTS. My check (money order) is enclosed for: [ ] $8 for 3 yrs. [ ] $6 for 2 yrs. [ ] $4 for 1 yr.
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Yes, every issue of WOOD & WOOD PRODUCTS brings you information on trends, practices and developments that's worth many times the *penny a day it costs. It's the least expensive business insurance you can buy!**

*Or less, if you subscribe for 2 or 3 years.

G. W. BALLANTINE has been appointed to the newly created position of manager of the Coated Abrasives department of Armour and Company's Alliance Division, E. W. Wilson, vice president, announced.

In his new position, Mr. Ballantine will have full control over sales, promotion, buying and research functions. He will be located in Alliance, Ohio.

Burt Powell

BURT POWELL has been named advertising manager of Caterpillar Tractor Co., Peoria, Ill., according to an announcement by W. K. Cox, manager of the sales promotion department.

Powell, a former city editor of the Peoria *Journal*, has been with Caterpillar since 1935 and assistant advertising manager since 1949. He succeeds Cox who was formerly advertising manager.

RUSSELL GERLEMAN has been named sales promotion director of the National Casein Co., Chicago, according to an announcement by Dr. Thomas H. Cook. Gerleman's former territory of Michigan, Ohio and Northern Indiana will be taken over by Richard Porter.

E. C. WARRICK, chief engineer of Delta Mfg. Division of Rockwell Mfg. Co., has been promoted to chief engineer of the firm's Power Tool Engineering Division, according to L. A. Dixon, executive vice-president. Warrick succeeds Paul E. Butzin, who will continue to serve as consultant for the division.

Another recent appointment: Albert G. Lindsay has been named manager of Rockwell Export and International Divisions.

F. A. STROVINK has been named assistant manager of the American Cyanamid Company's Paper Chemicals Department's Eastern Region, and J. C. Barthel has been named assistant technical director of the Department, according to J. M. Walsh, Department manager.

Hold Creosoting "Party"

About 50 representatives of Canadian railway, power and communications systems, as well as allied industries, attended an open house and luncheon at the Trenton, Ontario, Canada plant of Canada Creosoting Co. The occasion marked the processing of the first of about 50,000 poles to be preserved with pentachlorophenol for the Bell Telephone Co., Canada.

The chemical is used to treat a wide assortment of wood products, besides poles, against decay and insect attack. Penta was first produced in commercial quantities by Monsanto Chemical Co., St. Louis 4, Mo.

So. Box and Crate Assn. Meets

More than 75 representatives of box makers, their suppliers and arsenal representatives met August 13 at Birmingham for a special meeting of the Southern Box and Crate Assn. It was considered one of the best meetings of the Association, with box manufacturers from seven southern states and procurement and inspection personnel from eight ordnance plants and arsenals, as well as from the Small Defense Plants Administration.

T. B. Miller, vice-president of the Association from West Point, Miss., presided at the meeting. Miller introduced C. D. Hudson, manager of the National Wooden Box Assn., who informed the group that the Korean truce would not cause any immediate cut back in the requirements for ammunition boxes.

HEAT BELONGS INSIDE THE KILN

Moore-Kiln Doors Keep It There!

High insulating qualities combined with the strength and flexibility of metal—this explains why Moore Metal-Insulated Doors can soon pay for themselves on your kilns. They:

1. SAVE STEAM
2. IMPROVE DRYING
3. REDUCE INSURANCE
4. REDUCE FIRE HAZARD
5. LAST LONGER
6. EASY TO OPEN OR CLOSE

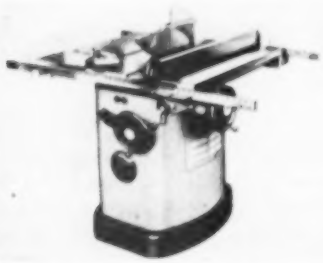
Replace your old dry kiln doors NOW, before cold weather sets in. Write for quotation.

MOORE DRY KILN COMPANY

Oldest and Largest Manufacturers of Dry Kilns and Veneer Dryers

JACKSONVILLE, FLORIDA — BRAMPTON, ONT., CANADA — VANCOUVER, B. C., CANADA — NORTH PORTLAND, OREGON

NEW and IMPROVED PRODUCTS



Tilting Arbor Variety Saw

Production has begun on a new 10 in. tilting arbor variety saw having a newly patented rip fence-fence rail construction that assures perfect fence alignment at all times. The new saw, Model G-110, is made by Yates-American Machine Co., Dept. WP, Beloit, Wis.

Besides all the essential features desired in a circular saw, the new rip fence guarantees alignment at all times. The fence locks, both front and rear, to the fence rails, and by the nature of its design, can only be locked when parallel to the saw blade.

The new G-110 has a maximum thickness cut of 3¾ in. Distance from the front edge of the table to the front of the blade is 13¾ in. Capacity cut is 25 in. to the right and 19 in. to the left.

Quick-Release Band Clamp

A new band clamp, designed for holding or clamping round or irregularly shaped objects and assemblies, is available from the manufacturer, the Adjustable Clamp Co., Dept. WP, 417-W N. Ashland Ave., Chicago 22. The clamp is the Style No. 62 Jorgensen Band Clamp.

The canvas band (steel band is optional) is 2 in. wide, encircles the object to be clamped, and is drawn tight by the screw-fixture. The band is quickly adjustable and the work is held by self-locking cams to a load of approximately 2800 pounds.

Stock sizes are from 10 ft. to 30 ft. band length capacity.

Sanding Discs Cement

Adhesive Products Corp., Dept. WP, 1660 Boone Ave., New York, announced recently the development of No. 994 Griptex, a heat-resistant cement for adhering sandpaper to metal or wood sanding discs.

With No. 994 Griptex, sanding discs need not be removed individually, but can be cemented one on top of the other until six or eight discs have accumulated, at which time all are easily removed at one time.

When sanding hard wood, the heat generated does not tend to make the cement sticky.

Quick Setting Glue

Colpres 10-B, a new, improved quick-setting room temperature urea resin adhesive has been announced by the Timber Engineering Co., Dept. WP, 1319–18th Street, N. W., Washington 6, D. C. Combining the advantages of strength, durability and water resistance, Colpres 10-B sets up rapidly, permitting the removal of

WALLY WALNUT Says:

"Here's Why MIDWEST Offers You your BEST BUY in WALNUT"

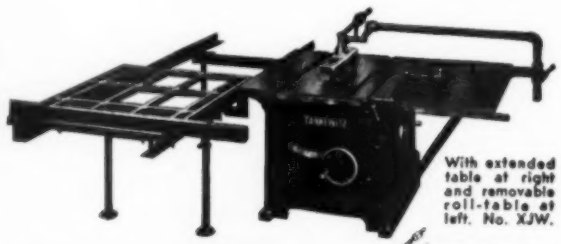
- You buy a **specialized product.** We select, cut, and sell only Walnut lumber — not a dozen different woods.
- You buy a **quality product.** We supply you choice, usable steamed Walnut lumber, the best to be had.
- You buy a **specific product.** Steamed Walnut lumber, dimension, and squares—the products of our sawmill and dry kilns—are our specialty. Air dried stock is available for immediate shipment.
- You buy an **economical product.** Our prices are competitive. What's more, our varied locations usually mean delivery at lower freight rates.

Write TODAY for Detailed Prices or Other Information!

MIDWEST WALNUT CO.

COUNCIL BLUFFS, IOWA

WARTRACE, TENN. WILLOW SPRINGS, MO.

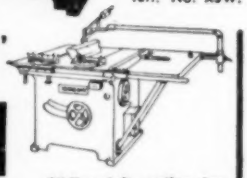


With extended table at right and removable roll-table at left. No. XJW.

Tannewitz "XJ"

FINEST THING IN MITRE SAWS!

Choice of 5 different tables enables you to obtain a mitre saw that matches EXACTLY your production requirements. Does away with awkward working conditions, steps up production, and saves time and money. Nothing like it. Moderately priced. Write for Bulletin XJ.

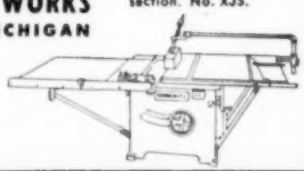


Sliding left section top and extended table at right. No. XJSW.

Standard solid table. (No. XJ) or sliding left section. No. XJS.

THE TANNEWITZ WORKS

GRAND RAPIDS, MICHIGAN



Extended table at right — extended sliding table at left. No. XJSW — J-430.

There are 12 good reasons to buy from the Morgan DIMENSION PLANT

HERE ARE THE FIRST THREE

1 OUR PLANT IS IN THE HEART OF THE APPALACHIAN REGION where we secure the best hardwoods at the lowest price to you. We also have Walnut, Mahogany and Pine.

2 DESIGN AND DEVELOPMENT DEPARTMENT to make samples and to develop your ideas and arrive at the best construction.

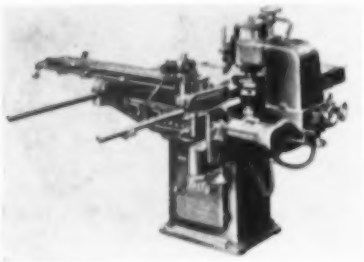
3 QUALITY CONTROL AND INSPECTION DEPARTMENT works to give you controlled quality of your product in our plant and periodic visits to your plant to assist you.

Morgan MANUFACTURING CO., INC., BLACK MOUNTAIN, N. C.

P. O. Box 458 Phones Asheville 3-5361 Black Mountain 2241

clamps from assemblies in as little as 10 minutes.

Designed for the furniture and woodworking industries, Colpres 10-B is ideal for bonding plastic laminates to plywood, for edge gluing and for wood-to-wood bonds with all common commercial species.



Tenoning and Coping Machine

An improved machine combining tenoning and coping heads in one unit, called the Festo Tenoner, has been announced by the Festo Wood-Working Machines, Dept. WP, 745–51st St., Brooklyn 20, N. Y.

Features include direct drive three HP motor, cut-off saw two and a half HP, with cut-off height at 3⅝ in. by 12 in. wide. Tenons are cut with copings up to 9 in. long and 4 in. thick at a single stroke. The machine is also available with an independent check-rail-slotter.

The Festo Tenoner permits quick and easy set-ups, while the heads themselves assure fast cutting. Simplicity of head design is intended to allow them to be shaped and sharpened by the user.

Rotary Motor Driven Sander

A new rotary motor driven sander, Model 53, with straightline reciprocating action, has been placed into production by the Dremel Mfg. Co., Dept. WP, Racine, Wis. The new machine is claimed to be the first motor-driven sander of its kind to offer straight-line action.

An unusual paper holder assembly detaches from the machine easily. An extra paper holder unit is furnished so that grits can be switched quickly without bothersome paper change.

New Design Saw Bit

A new design, all-purpose, all-season bit for inserted tooth saws has just been announced by Simonds Saw and Steel Co., Dept. WP, Fitchburg, Mass. A saw bit that would work equally well in winter and summer, this new type bit represents an advance in saw bit design.

Unlike conventional bits, Simonds new "Stand-All" Bit is designed to break up the sawdust and deflect it away from the swage of the shank or holder. This reduces shank wear, helps expel the sawdust more effectively and prevents sawdust from slipping past the shank and spilling into the cut. As a result, friction in the cut is reduced, the saw runs freer and cooler, and saw tension remains more constant because the saw rim does not heat up.

With less wear on the shanks, the saw will retain its proper tension longer and require less frequent ham-

HANCHETT ANNOUNCES *the* PURCHASE *of the complete line of* SWAGES *and* SHAPERS *from* ATKINS *Saw Division, Borg-Warner Corporation*

ATKINS ORIGINAL PRIBNOW SWAGE SHAPER

Bench Tested and Mill Proven

Complete stock of machines in all models and sizes available from both HANCHETT PLANTS or through accredited dealers.

THE NEW ATKINS SWAGE

COVEL SAW SHARPENERS HANCHETT KNIFE GRINDERS

Write for further information

HANCHETT MANUFACTURING COMPANY

World's Largest Manufacturer of Saw Sharpening and Knife Grinding Machinery

Main Office: BIG RAPIDS, MICHIGAN • West Coast: 102 First Ave., S. W., PORTLAND 4, OREGON

to speed production - Just Step On It

PORTER 43-20J Automatic Hydracut Saw

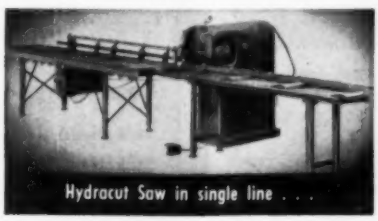
Foot Pedal Control Ends Operator Fatigue

Save hours of labor with the Porter 43-20J. Your cutting room operators, no matter what age, cut more lumber per day because the Porter 43-20J eliminates the fatiguing pull-push hand operation. With the Porter Hydracut the operator simply positions the lumber against the adjustable cut-off stops . . . then presses the electrically operated foot control. The saw blade, mounted on a hydraulically operated carriage, *automatically* moves forward to make the cut and *automatically* returns.

Stroke length is quickly adjusted by a convenient lever. Cutting speeds range from 0 to 45 cuts per minute.

For complete details write for Porter Bulletin 43-20J.

Standard Set-up. Hydracut Saw and tables.


Hydracut Saw in single line . . .

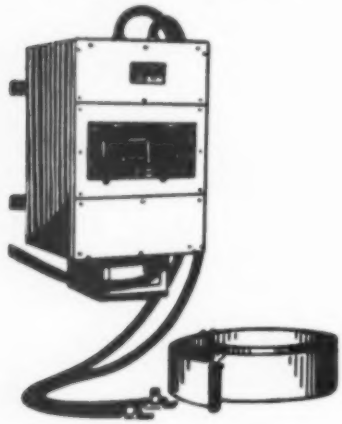
or double line rough mill conveyorized system.

Dividend Designed by **PORTER**

C. O. PORTER MACHINERY CO.

660 Front St., N. W. **Grand Rapids, Michigan**

mering. This new type bit is designed for use with standard shanks.



New Bonding Units

Heavy-duty, low-voltage power supply transformer with durable, flexible stainless steel heater strips, make up a Washburn Heating Unit, manufactured by the Washburn Electric Co., Dept. WP, 202 Sherwood Pl., Englewood, N. J.

Operating temperatures up to 350° may be obtained. Special units for bonding large or wide surfaces can be made to order.

NEW CATALOGS and LITERATURE

Safety Booklets

"Working Together for Safety" and "Safety Zoo" are the titles of new booklets available from the National Safety Council, Dept. WP, 425 N. Michigan Ave., Chicago 11. The first booklet is a new employee rules manual listing safe work habits applicable to most plants. "Safety Zoo" is a series of animal photographs with amusing safety comments as captions.

Knife, Saw Grinder

Two new bulletins have been issued by Samuel C. Rogers & Co., Dept. WP, 183-205 Dutton Ave., Buffalo 11, N. Y. Bulletin EE describes the Rogers Type EE Knife Grinder. Front and back views, descriptions of the features and specifications are included. Bulletin DH shows the Rogers Type DH Carbide Saw Grinder. Specifications are listed and views of the machine are shown.

Abrasive Belt Machine Folder

An interesting folder in two colors, describing the Fenlind Micro Finisher, is available from Behr-Manning, Dept. WP, Troy, N. Y. The new machine utilizes Behr-Manning Durite paper belts. Macro-photographs showing carbide tools after being ground on the Fenlind machine are included.

Timber Products Catalog

Information on using the Teco slope-of-grain-detector is one of the items included in the new Teco products and services catalog distributed by Timber Engineering Co., Dept. WP, 1319-18th St., N.W., Washington 6, D. C. Descriptions and applications of the various products used in the Teco connector system of wood construction are also in the new edition, along with their distributors' names and addresses.

Waterproof Adhesives Booklet

A new 8-page, illustrated booklet on penacolite resorcinol adhesives has been made available to the trade by the Chemical Division, Dept. WP, Koppers Co., Koppers Bldg., Pittsburgh 19, Pa. The new bulletin, C-3-149, discusses the origin of resorcinol-formaldehyde adhesives as

Our Methods are Your Gain in

Permawood

We make PERMAWOOD panels with a minimum of waste. By offering standard sizes, we save you money. Other savings are effected in timber selection, use of finer machines and methods to make a better product—PERMAWOOD Hardwood Plywood.

Tapeless Splicers make panel faces from narrow width veneers, after careful matching for color and grain.

PERMAWOOD panels are made in Standard Sizes. Thicknesses in All Veneer construction from 3/20" to 1 1/16", and Lumber Core construction in 3/4" and 13/16". Widths from 30" to 48"; lengths from 36" to 96". Write for latest stock lists and prices.

DARLINGTON VENEER CO., INC.
Established in 1918
DARLINGTON, SOUTH CAROLINA

"OLIVER" Single End TENONER

Fast and accurate . . . for tenoning, coping, cut-off work

This speedy, accurate "Oliver" cuts tenons 7" long with one cut, 10" with two cuts, 6" thick and 24" wide. Makes double or triple tenons 4" deep. Cuts off stock 42" wide. Heads are adjusted by screws having 16 threads per inch for quick set-ups: a half-turn adjusts head 1/32", a quarter-turn, 1/64". *Write for Bulletin No. 125-D.*

OLIVER MACHINERY COMPANY
Established 1890 GRAND RAPIDS 2, MICH.

NOW!

WOOD-LOK®

3026*

a basically improved and approved resin glue

more PLUS Features

- **STRONGER BOND** coupled with high initial strength permits prompt handling of assemblies. Saves hours. No need to wait for glue to cure.
- **LOWER CLAMPING PRESSURES** produce high strength with as little as 10 psi—as proven by impartial tests. Reduces jig and case clamp costs; also clamping and releasing time.
- **HIGH HEAT RESISTANCE.** Unlike ordinary polyvinyl acetates, WOOD-LOK's patented copolymer has been designed to resist the higher temperatures encountered in modern forced baking of wood finishes.
- **FREEZE-THAW STABLE WOOD-LOK 3026** is completely unaffected by repeated freezing and thawing in transit or storage. WOOD-LOK's production savings are now available the year 'round.
- **ALWAYS READY FOR USE.** No costly labor for preparation. No wastage due to hardening in glue pots.
- **FASTEST SETTING WOOD-LOK 3026** is unaffected by changes in temperature. Eliminates hot glue pots. Produces uniform setting regardless of shop temperatures.
- **GREATER VERSATILITY.** WOOD-LOK, which is unexcelled for the manufacture of case goods, is also unexcelled for laminating plastic/plywood dinette tops, gluing flush doors, and gluing composition and synthetic woods.
- **FULLY TESTED.** In production, as well as independent laboratories. Full details and copies of test results are available upon request. National's technical service is always available to you.

Shortens Assembly Time

—because case goods can be passed through all subsequent operations after a clamping period of only 15 to 20 minutes.

Tough, fast-setting special vinyl copolymer permits immediate handling after assembly. It reduces costly production delays in the assembly room and spray booth line.

RESYNS® National ADHESIVES

Address: 270 Madison Avenue, New York 16; 3641 So. Washtenaw Avenue, Chicago 32; 735 Battery Street, San Francisco 11; and other principal cities.

YES! **I'd like to test National's new improved and approved WOOD-LOK 3026. Please send:**

☐ 5 gallon container. Bill me at the quantity drum price.
☐ Have a National representative call.

Name _____ Title _____

Company _____

Address _____

City _____ Zone ____ State _____

*If you already use WOOD-LOK you will continue to receive your present WOOD-LOK until we are instructed to change to WOOD-LOK 3026.

well as the types of adhesives now made for specific applications. Phenol-reorcinol-formaldehyde adhesive formulations also are discussed.

Steel Strapping Bulletin

The Strapping Division, Dept. WP, Acme Steel Co., 2840 Archer Ave., Chicago 8, has issued a new bulletin on the advantages of packaged lumber. Chief savings claimed by strapping lumber is in the ease and quickness of handling packaged lumber over loose boards.

Log Transportation Booklet

Transportation and its effect on profits is the subject of a new booklet, "Modern Logging," issued recently by Caterpillar Tractor Co., Dept. WP, Peoria 8, Ill. The 8-page booklet, form 30666, shows loggers all over the world in efficient log moving operations.

Moisture Absorption Report

Report No. 8 on properties of tropical woods, titled "Moisture Absorption in Certain Tropical American Woods (revised)" has just been made available by the School of Forestry, Yale University, New Haven. Conn. The booklet supplements and summarizes an earlier one of the same title. Results of the amount of absorbed moisture and its distribution pattern are presented.

Drum Sander Folder

Information about a new drum sander is available in a folder from Fjellman & Winther Engineering Co., Dept. WP, P. O. Box 1205, Joliet, Ill. Called the VPA Drum Sander, the machine has a number of outstanding features, one of which is the ability of the machine to sand veneer of .03 in. thickness.

Industrial Trucks Bulletin

All standard models of Raymond electric industrial trucks and hydraulic elevating equipment are described in Bulletin No. 209 obtainable from the Raymond Corp., Dept. WP, 247107 Madison St., Greene, New York. Complete specifications and explanations of the special features of each model are given.

Clamp Catalog

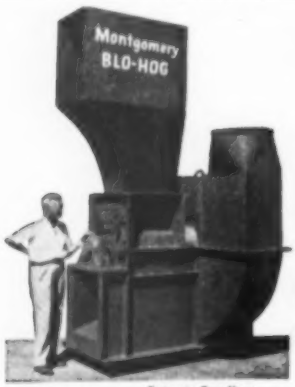
Catalog No. 18 describing the Jorgensen and Pony clamps is now available from the Adjustable Clamp Co., Dept. WP, 417 N. Ashland Ave., Chicago 22. The complete line is presented of both clamps and handscrews. Besides the usual well-illustrated catalog features, many how-to-do-it suggestions on the care of clamps are offered.

"Paintability" Newsletter

"The Paintability of Wood After Pressure Treatment with Pentachlorophenol-Petroleum Solutions" is the title of Technical Newsletter No. 10 issued recently and available from the Chapman Chemical Co., Dept. WP, 707 Dermon Bldg., Memphis 3, Tenn. The 5-page newsletter records the results of extensive experimental work by the Chapman Company on the problem.

"Warm Press" Bulletin

Thin, flexible "blankets," connected to ordinary electric power supply to help convert cold presses to "warm" presses, are described in bulletin No. 102 available from the Washburn Electric Co., Dept. WP, 202 Sherwood Place, Englewood, N. J. Called Uskon Heating Units, they are used in the industry for obtaining quick cure of glue lines.



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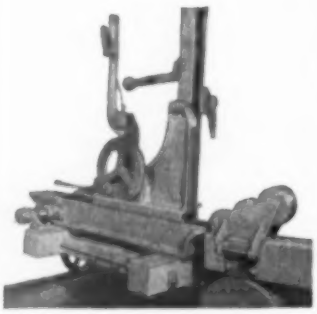

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QUALITY CONTROL

Continued from Page 26

improving quality on his particular job. It is amazing what can be learned from operators, if only they are given a chance to be heard.

7. Pick "Bread and Butter" Jobs. It is essential in the successful development of a quality control program that, at the earliest possible moment, it be able to pay its own way. It is, then, only "smart business" to carefully pick several applications of statistical quality control that will pay off handsomely.

Nothing will more quickly establish quality control as a vital part of the organization in the eyes of management than for it quickly to become self-sufficient. The psychological effect in creating a desire for quality control among production supervision is, of course, greatly enhanced by a few highly successful applications.

In the fairly extensive program described here, quality control in about six months had paid off the initial investment (which included new office facilities among other things) and was "paying its way" currently.

8. Promote Quality-Mindedness. All too often the blanket charge is leveled that the worker of today just "doesn't give a hoot" about the quality of work he does. Experience in talking with operators does not bear this out. One of the prime urges of all mankind is the urge to be recognized, and one of the most straightforward roads to recognition is by doing one's job well. This prime urge must be cultivated at every opportunity.

The worker must be made to realize fully that doing good work is ultimately in his best interest. Surely, no better time exists to sell the idea of quality workmanship than when an employee is first hired.

In the training course outlined previously, foremen are urged to spend three minutes each day talking quality to one operator, and to see that each operator is shown, perhaps by visiting subsequent operators, why it is essential that he do his job correctly.

There is, of course, much value to be obtained through use of quality posters, displays of defective work, reprints of complaint letters, etc.

9. Establish Adequate Report Systems. To be of any value, the facts gleaned from a statistical approach to a quality problem in manufacturing must be transmitted *promptly, accurately and concisely* to the parties in a position to take corrective action. Similarly, a means of frequently and regularly reporting overall progress of the quality control program to management should be found.

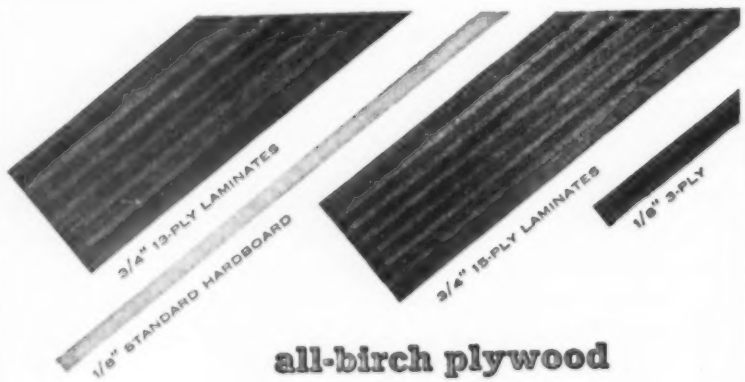
The problem of establishing an adequate filing system for control charts should not be overlooked. Forms, charts, etc., must be suited to the needs of the individual company.

10. Establish Quality Standards. One of the greatest advantages to come to the wood industry from the use of statistical quality control techniques will be that they will force us, for the first time, to define our quality standards. Such vague statements as, "Make it like the print and you'll have no trouble", or "The finish on that panel is not up to our standard quality", have long plagued the industry.

In today's mass production scheme of things, it is essential that the workers know exactly what quality is required, whether that quality be length, width, color or finish.

The development of the furniture industry into a mass production enterprise will force the establishment of tolerances and definite quality standards, several hundred years' practice to the contrary notwithstanding. The worker welcomes definite quality standards because, for the first time, he really knows what is expected.

(To Be Continued)



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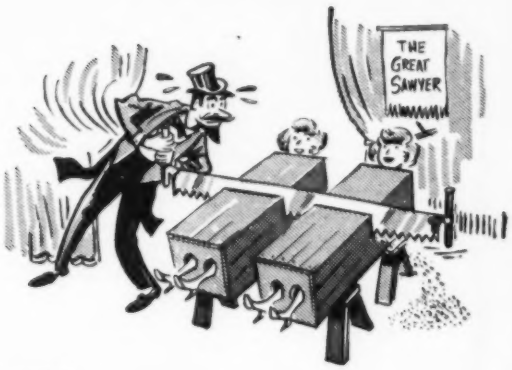

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Thank you for the information in your recent letter. It has been very helpful, as all your suggestions have been. May I take this opportunity to say that we are more than pleased with the operation of our two Standard kilns over the past two years. We are drying a great deal of thick Maple, green from the saw, with considerable success.

Very truly yours,

Carl H. Esdorn

Carl H. Esdorn, Owner

● This is a photograph of the STANDARD Dry Kiln installation referred to by Mr. Esdorn. The two kilns are of the end piling, double-track type. They are 24 feet wide by 42 feet long, and have a control room and a boiler at the back end. Heated with an automatic oil-fired boiler, the kilns are used for the commercial drying of all kinds of wood grown in the Appalachian region.

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3-D LOOK AT FOREMEN

Continued from Page 32

attitude toward their production workers.

Two of the corporation's officers, exposed to the theories of "human relations," decided that it would be a good idea to put into practice. After brief, top-level discussions, an order was issued that each echelon of supervision would have group meetings with their immediate subordinates. Foremen would do likewise with their people. No prior training was given, no explanations, no agenda—just meet and "talk things over."

Like good foremen, they did as they were told. The results were embarrassing for both the production workers and foremen.

Not long ago, the same corporation tried the idea again. This time, one supervisor was chosen. He and his foremen were briefed thoroughly and given training in the whys and hows of conducting meetings. After long debate as to subjects most likely to create discussion, a series of meetings was scheduled, tied to the inauguration of a suggestion system in the plant.

While the meetings were going on, foremen from other sections were brought in as observers. They, too, were given training. The results of the meetings were enthusiastically reported in the company's house magazine. Eventually, every section of the plant held its own series of meetings.

At last report, more than 6,000 suggestions had been received from the rank and file. More than 80% were accepted. About 20% led to increased production, simplified methods, savings in handling costs, reduced waste, improved working conditions. A full dozen suggestions proved to be of substantial financial value to the company.

As valuable as these tangible results are, they reflect only a small portion of the benefits that accrue in human relations. In this plant, morale shot up generally as employees developed a feeling of sharing in the company's problems. The foremen, who had been the unfortunate "fall guys" in the first experiment, found new areas of mutual understanding and respect among their people.

The meetings are being held regularly now on all pertinent subjects, and with good results.

The subject is so vast and so detailed that it is only possible here to indicate the interdependence of company officials and the foremen in the role they play in human relations. If there is a general rule that could apply, it may be this:

Take a three-dimensional look at the standards management has set for the foremen. Be sure that the reflection of management in such a view measures up to standards, too.

SANDING HINTS

Continued from Page 27

chining, grit sizes used are frequently No. 80 (0), No. 100 (2/0), No. 120 (3/0), and sometimes as fine as No. 150 (4/0) on the last drum. This setup is also very satisfactory for sanding veneered panels. . . .

Some manufacturers of low-priced furniture finish directly from the multiple drum sander, but in plants manufacturing medium and high-grade furniture practically all visible surfaces are belt polished after drum sanding.

There are three general types of polishing belt machines in common use. The oldest, and the one which is still used for general-purpose sanding and polishing, is the hand block sander. Then we have the lever stroke machine, and the automatic stroke machine.

Both the lever stroke and the automatic stroke are available in either

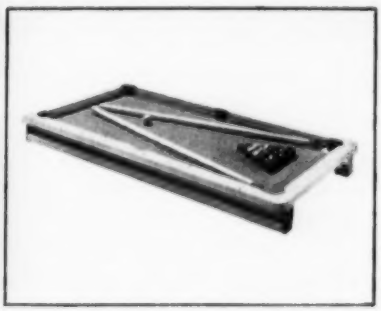
How 20 workers make 500 tables a day with Weyerhaeuser pre-cut wood parts

Two years ago a small firm, making juvenile pool tables, came to Weyerhaeuser. By having the table parts pre-cut by Weyerhaeuser, the firm was able to increase production with a minimum of factory space, workers and machines. In addition, Weyerhaeuser engineers helped cut the number of different sizes and shapes of parts needed from 26 to 12—for further savings in production costs.

Using Weyerhaeuser parts, 20 employees turned out up to 500 tables a day. This represents an annual total *double* what they could have produced working with standard lumber.

The manufacturer, the Den-Ricks Company of Farmington, Minnesota, reports steadily increasing production—and gives Weyerhaeuser Industrial Wood Parts credit for helping them achieve high output per worker and low unit costs.

Interior of Den-Ricks plant. Good production in small space, with a minimum of workers and equipment, is accomplished by using pre-cut wood parts.



About 20 workers manufacture, pack and ship 500 of these miniature pool tables in one day. Most of the workers are women.

FIND OUT HOW PRE-CUT PARTS CAN INCREASE YOUR PRODUCTION, CUT EXPENSES

A brief note, explaining your production problems, may permit us to quote prices that will increase your profits. Write now for full information.

Weyerhaeuser Sales Company

Industrial Wood Parts Department

ROOM 2135, 400 WEST MADISON, CHICAGO, ILLINOIS

single belts or double belts, and on the automatic stroke the hydraulic system has just about replaced the old gear and cable mechanism on the new machines. . . .

Abrasive grit sizes used on polishing belts vary considerably according to conditions. Where one belting operation only is employed, it is seldom practical to go more than one grit size finer than the grit on the last drum of the multiple drum sander. In other words, if 2/0 is the last grit on the multiple drum sander, a 3/0 belt would generally be use.

If too big a jump is made between the last grit on the drum sander and the grit used on the abrasive belt, the wood fibres are generally not properly cut down and a high-gloss surface is produced which is sometimes mistaken for a good sanded surface, but generally an excessive amount of sanding results in the finishing department.

Where two polishing belts are used, it would be good practice to use the same grit or one grit finer than the last drum on the first belt, and jump two grits to the final belt. To summarize, the grit sizes commonly used on polishing belts vary from 0 through 7/0.

For the past several years, the trend has been to increase the speeds of polishing belts. This has proved very practical in the coarser grits and on many different types of wood, but in grit 5/0 and finer, and especially on wood such as mahogany, considerable burning has been experienced at these higher speeds. Experience so far seems to indicate that 5,000 s.e.p.m. is about the maximum speed for these fine grits on mahogany and similar woods.

A variety of jobs are sanded on edge belt machines, and grit sizes used include 1/2, 0, 2/0 and 3/0. "X" weight garnet cloth is generally used, although there is some preference for "X" weight aluminum oxide cloth, and many planers have found it practical to use paper belts for straight edge sanding.

The efficient sanding of mouldings requires a considerable amount of ingenuity. Many different methods are employed, depending upon the shape and detail of the moulding, the volume, and frequently upon the ability of the available mould sanding operators. The most efficient and most commonly used method is the moulding belt.

However, many moulding shapes cannot be readily sanded on a belt, and must be sanded on one of the several spindle machines with flexible cloth abrasive fastened over a felt or rubber wheel shaped to fit the moulding. Some mouldings are so delicate or complicated, or the volume is so small, that it is more practical to sand them by hand.

There are two types of moulding belt machines—one uses the hand block method and the other the fixed block method. The fixed block method is commonly used for simple mouldings, whereas the hand block method is commonly used for more complicated mouldings or for sanding odd shapes. Cloth in either garnet or aluminum oxide and grits 1/2, 0, 2/0 and sometimes 3/0 are commonly used.

Moulding cloth is available in several different degrees of flexibility, such as unflexed, singleflex, doubleflex and tripleflex. The shape of the moulding and the preference of the operator generally determine which flexibility is used.

Moulding belts are usually run at a comparatively slow speed of between 2,500 and 3,000 s.f.p.m., since a high speed will frequently cause burning and will also make it more difficult to control the belt.

Most wood turnings are sanded on the automatic brush-type machine, and scored garnet or aluminum oxide paper in grits 1/2 through 5/0 inclusive is commonly used, depending upon condition of turning and finish desired. (*Please turn to Page 74*)

● The secret of the ability of CARBORUNDUM's Cabinet and Finishing Papers to sand flats and contours speedily and easily is in the backing. Specially treated, these backings are extremely tough and durable—yet their amazing flexibility prevents cracking and avoids wild scratches.

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There is a wide variety of other machine sanding operations, such as variety belts, strapping belts, pneumatic drums, spindle sanders, etc., which are commonly used in most furniture plants, but space does not permit the discussion of these machines in detail. . . .

Most progressive plants make every effort to deliver the parts to the assembly department completely sanded so that the amount of sanding in the assembly department can be reduced to an absolute minimum. However, despite all efforts along this line, a certain amount of hand sanding continues in the cabinet or assembly department. Some of this is on odd-shaped parts which are inaccessible or impractical to machine-sand, and on certain types of furniture where joints are flushed after assembly, which usually necessitates sanding after flushing.

Then, there is a certain amount of sanding necessary to remove mars which result from handling. Also, many concerns are finding it very desirable to sand all prominent face surfaces with one of the several "jitterbug" types of machines just before the furniture goes into the finishing department. Abrasive paper in grits 5/0, 6/0 or 7/0 is generally used on these little machines, and for hand sanding, grits 0 through 5/0 in cabinet paper or finishing paper are commonly used. Close supervision should be exercised to assure that too coarse a grit size is not used.

Editor's Note.—*The foregoing article is extracted from a paper presented by the author at the 1953 meeting of Forest Products Research Society.*

LUMBER VS. VENEER CORES

Continued from Page 36

discussed under the heading, "What to Do About Warping and Twisting in Veneer Cores," (WOOD & WOOD PRODUCTS, January, 1953), referred to thin plywood, up to about ¾ in. thick, and did not cover the problems that may occur in making thick all-veneer constructions for table or desk tops, from ¾ in. to 1¾ in. in thickness.

It was pointed out in the earlier article that rotary-cut veneer has a "memory". In other words, even though thoroughly flattened out in drying, it has a tendency to return to its original curvature. This may cause warping unless it is properly balanced as it is glued into plywood. The method of obtaining such balance is shown in Fig. 2, greatly exaggerated for emphasis.

The original concave side of the

veneer (loose cut side) is always laid toward the central layer. Thus, the normal tendency to curve is balanced by each pair of parallel grain layers. Theoretically, the central layers should be doubled and similarly balanced, but this makes an awkward 6-ply construction that is rather impractical. If this central layer is "loose" cut or "tenderized" by slitting, the balance is satisfactorily established by the four outer layers in opposed pairs.

The convex side of veneer is marked by many veneer cutters with a crayon resting on the log during rotary cutting. Any veneer mill can do this marking and the extra cost, if any, will be insignificant. Such balancing is a fundamental requirement in making all-veneer core blanks that will stay flat.

Another point to watch in buying all-veneer cores is to obtain them unsanded, with enough surplus thickness allowance for a very thin surfacing on both sides. They should be planed just before gluing with a sharp knife and a "skin" cut.

It is always advisable to apply the face and crossband veneer on an all-veneer core at the same time, rather than to attempt to put on a face veneer alone (without crossband), no matter if the layer below has the proper crosswise grain direction.

The crossband should be of a species that does not transmit its grain figure through the face veener when finished. Uniform textured hardwoods, such as poplar, gum or birch, are preferable. If conditions require the use of a softwood, such as Douglas fir, careful selection must be made to avoid the use of crossband veneers with conspicuous grain figure, which is difficult to mask under a face vencer finished in a high gloss.

There are some design problems that must be considered by veneer mills in making either plywood cores for sale as such, or complete plywood. A suitable 5-ply all-veneer core blank is shown at the left in Fig. 3. The layers are each approximately ⅛ in., but may be cut "plump" or "scant" according to the thickness desired, which must make proper allowance for final planing. Eventually, when the customer has applied the 1/28 in. face and back and the 1/20 in. crossbands, it becomes a 9-ply construction.

If, on the other hand, the plywood mill makes the complete plywood in one gluing, the design can be simplified into a 7-ply, as shown at the right in Fig. 3. The three central layers may be approximately 3/16 in., and the crossing no thicker than 1/12 in.

Crossings 1/8 in. thick, in the parlance of veneer mills, are too "stout"

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and may encourage warping. It is not practical to sell 3-ply (3 x 3/16 in.) as all-veneer core blanks, as they are dimensionally unstable and likely to warp seriously before they can be glued.

The edge treatment, customary in both table and desk tops (other than the ogee edge shown in Fig. 2) is equally applicable either to lumber cores or to all-veneer cores, (Fig. 4).

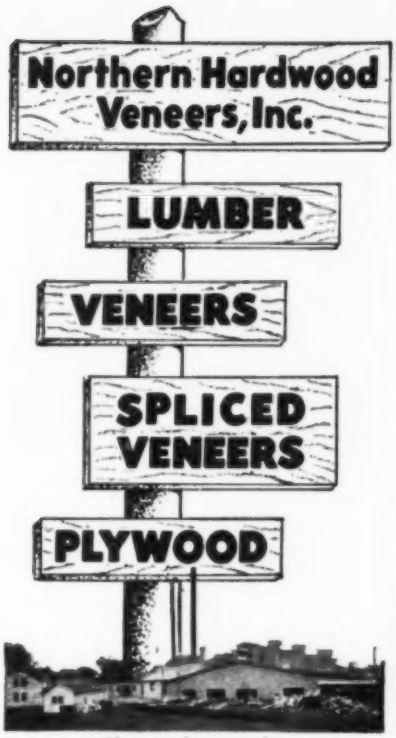
The usual type of lumber core top is made with poplar or gum lumber with specific gravities between 0.41 and 0.52, which indicates a board foot weight of 2 to 2½ lbs. Balsawood, an imported lumber from the tropics, is much lighter, ranging from ½ to 1 lb. per board foot. Its use as a lumber core will substantially reduce the weight of a plywood top, and it is finding favor with a number of plywood manufacturers. It is not known to be available in rotary-cut veneer.

This discussion, so far, has covered lumber cores or all-veneer cores, both of which have been proved satisfactory. They require substantial amounts of labor in their fabrication and, with the exception of balsawood, are relatively heavy for convenient and economical handling. The future will demand lighter and cheaper tops.

A cheaper construction will be a chipboard core, made of ground waste wood with a binder such as some relatively low-cost glue. The technique will conserve our limited supply of valuable wood, and such cores should be less susceptible to swelling, shrinking and warping than solid wood. However, they will offer no relief in weight.

Another design, one that has already found wide acceptance in flush door construction, is the semi-hollow core. It takes many forms, a few of which are illustrated in Fig 5. These are lighter in weight than lumber cores, all-veneer cores or chipboard, and are reasonable in cost. The weight of a top will be considerably less than half that in the other constructions. The semi-hollow core technique has been well developed, its durability has been demonstrated, raw material is conserved, but it is "different". Hence, it is a challenge to desk and table top users.

There are many factors involved in relative costs, and there can be no hard and fast answer. One factory with its equipment and available raw material may find the lumber core cheaper, while another may find the all-veneer construction more favorable costwise. Others will favor chipboard or semi-hollow cores. Quality can be equal, provided proper techniques are followed.



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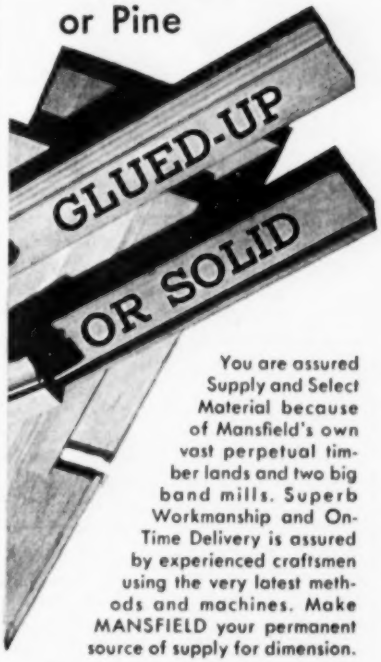

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ROBERT D. PAULEY

RECENTLY INSTALLED as president of the Forest Products Research Society, Robert D. Pauley is probably best known throughout the industry for the important part he has played in many notable technical advancements in the integration of new processes and the merchandising of new products in his years with the Weyerhaeuser interests.

Now manager of the Special Products Division of the Weyerhaeuser Timber Co., for which division he directs both manufacture and sales, Mr. Pauley has been associated with Weyerhaeuser since his graduation from Iowa State College at Ames, Iowa, from which he holds a B.S. degree in architectural engineering. Until a little more than a year ago he was manager of the Weyerhaeuser Development Center with headquarters at Longview, Wash., and as such gave much of his time and attention to the commercialization phases of new products, processes and equipment.

Pioneering developments which he supervised included exterior plywood, compression barking, "Silvacon" bark products for adhesives, oil well drilling additives, molding compounds and many other industrial uses; "Silvacel" whole wood fiber products for thermal insulation, industrial felts and papers, and molded contoured articles; fiberboards of wide variety, and a new laminated veneer sheet material for containers.

For a number of years Mr. Pauley was associated with Weyerhaeuser interests in Minnesota, where he reported to Clark Heritage, now director of development for the company at Tacoma. At that time Mr. Heritage directed development work for the Wood Conversion Co. at Cloquet, Minn., in the field of wood fiber, board and blanket products.

Subsequently Mr. Pauley was transferred to Longview, Wash., where he supervised construction of the present Weyerhaeuser Development Center. One of the most significant current activities of his Special Products Division is the company's new Klamath Falls hardboard plant which is expected to be in full-scale operation later this year.

Mr. Pauley is a charter member of FPRS and always has been one of its most active members. He had charge of arrangements for the technical program of the 1953 national meeting in Memphis, and has also served in the following posts: northwest regional board member, 1948-51; chairman of executive board subcommittee on regional and sectional boundaries; general chairman of 1950 national meeting and industry show in Portland, Ore.; national chairman of the membership and finance committees, and national vice-president.

WILLIAM F. LEICESTER

A THOROUGH KNOWLEDGE of the needs of the wood industry has made William F. Leicester, vice-president of the Borden Co. and president of that organization's Chemical Division, a leading figure in the field of wood industry adhesives.

Mr. Leicester entered the glue business in 1920, when he joined the Monite Waterproof Glue Co. as vice-president, after three years in the Canadian Infantry in World War I. In 1924, he joined the Casein Mfg. Co. as sales manager of the glue department, and three years later was named manager of the department. He continued in that capacity when Borden's acquired Casein in 1929. In 1946, he became a Borden vice-president.

Mr. Leicester developed a series of new markets for the Casein Co. of America both before and after Borden Co. acquired that operation. He opened affiliates throughout the Western Hemisphere and started plants in Sweden, Great Britain, Australia, Argentina and Brazil.

The use of urea-formaldehyde resins in the furniture and hardwood industries was pioneered by Mr. Leicester after he had secured the United States rights from the I. G. Farbenindustrie in Germany in 1936. By 1940, under Mr. Leicester's direction, Borden's Chemical Division was manufacturing this adhesive in Bainbridge, N. Y. and Seattle, Wash.

Another expansion program in 1946, again backed by his knowledge of the wants of the wood industry, involved the production of formaldehyde, urea-resin and phenolic resin glues for West Coast plywood plants at Springfield, Ore. At the same time, a new unit was opened in North Carolina for the production of urea-resin adhesives for southern furniture and plywood manufacturers.

Mr. Leicester has also directed his division's entry into the business of making molding compounds, bonding resins and lamp-basing cements, and its production of formaldehyde and hexamethylemetetramine in Alabama, and of resorcinol at a recently completed plant in California.

He believes that the "trigger effect" of resorcinol on the curing of phenolic resins will finally make it a vital element in the adhesive and plastic industries.

Mr. Leicester is a member of the Chemists' Club of New York and other business organizations.

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